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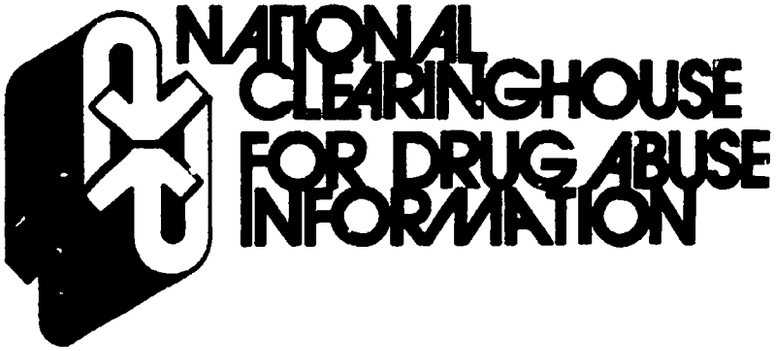
ABSTRACT

This second edition of the "Resource Book" assembles a selection of scientific, philosophical, and educational drug abuse literature. The publication, as viewed by its authors, serves as a basis for improved understanding, trust, and communication between teacher and student concerning drug use and its place in both contemporary youth culture and in general society. The first section of the book includes articles which attempt to enhance adult perceptions of young people, their attitudes and problems, and the diversity of motivations behind their use of drugs. Section 2 presents articles on specific drugs, both legal and illegal. Articles in Section 3 present a variety of current treatment program models and describe drug abuse research efforts. The final and most extensive section of the book deals with matters relating to the specifics of the educational process as related to drug abuse. It is hoped that this publication will provide educators with valuable information about drugs and the drug scene, and will act as a catalyst in promoting the committment and involvement needed to make the classroom an effective focus in drug abuse prevention.
(Author/PC)

RESOURCE BOOK FOR DRUG ABUSE EDUCATION

SECOND EDITION



The National Clearinghouse for Drug Abuse Information, operated by the National Institute of Mental Health on behalf of the Special Action Office for Drug Abuse Prevention and the Federal agencies engaged in drug abuse education programs, is the focal point for Federal information on drug abuse. The Clearinghouse distributes publications and refers specialized and technical inquiries to Federal, State, local, and private information resources. Inquiries should be directed to the National Clearinghouse for Drug Abuse Information, 5600 Fishers Lane, Rockville, Maryland 20852.

The articles appearing in this second edition of the *Resource Book for Drug Abuse Education* were selected and edited by Mrs. Muriel Nellis under a contract from the National Institute of Mental Health.

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INTRODUCTION

Since publication of the original *Resource Book for Drug Abuse Education* in 1969, a substantial amount of new drug abuse information has been written which may be of interest and helpful to educators in conducting programs of drug abuse prevention and education. In the continuing effort by the Federal Government to provide as many tools as possible to teachers, community leaders, and others involved in handling drug abuse issues, this second edition of the *Resource Book* assembles a selection of scientific, philosophical, and educational drug abuse literature.

Hopefully, the publication will serve as a basis for improved understanding, trust, and communication between teacher and student about drug use and its place both in contemporary youth culture and in the general society. An additional benefit may accrue in helping establish the school as a primary setting where other social and health problems can be openly and constructively dealt with in discussion and action.

The *Resource Book* alone, of course, cannot and is not intended to offer simple equations for solving drug abuse problems or providing instant expertise in drug abuse education. Each educational program, by definition, must be tailored to the mood and character of the student population and the community, as well as take into account any existing drug problems in the local area. There is no single answer to drug abuse education and prevention, just as there is no single motive responsible for all drug use. Simple d vises or one-dimensional approaches have been demonstrated to be insufficient, and frequently counter-productive, in dealing with so complex a problem.

The first section of the book, "Drug Abuse: Insights and Perspectives," includes articles which attempt tc enhance adult perceptions of young people, their atti·udes and problems, and the diversity of motivations behind their use of drugs. The historical and contemporary context of youthful rebellion and its relation to present drug use is explored in articles by Drs. Dana L. Farnsworth and Stanley H. King. Dr. Reginald G. Smart describes the results of a survey of high school drug use in Toronto, Canada, and discusses its implications for education programs. Finally, Dr. Richard H. Blum examines trends and patterns of drug use in the U.S. and predicts what the outcomes are likely to be.

Section II, "Drug Abuse: Definition and Delineation," presents articles on specific drugs, both legal and illegal, which are being used today by young people. The nature of the drug abuse problem and the chronic issue of definition of drug abuse are examined by Dr. Jean Paul Smith. Educators may find Dr. Daniel X. Freedman's explanation of drug dependence using alcohol as the addictive model a valuable vehicle for stimulating classroom discussion. The variety in patterns and habits of cigarette smokers, examined by Dr. Daniel Horn, may also be useful in stimulating teacher-student dialogue.

A summary of the second annual report on *Marihuana and Health* from the Secretary of Health, Education, and Welfare to the Congress should help teachers "square" with students in discussing the many contemporary values and issues c· ·cerning this drug, use of which is already widespread and is rapidly expanding. Stimulants and heroin, two drugs of abuse with very serious potential for harm being used today by school age youths, are discussed by Drs. Sidney Cohen and Oliver Gillie, respectively, with reference to the reasons for use and the physical and psychological consequences.

Articles in Section III, "Drug Abuse Programs: Prevention and Intervention," present a variety of current treatment program models and describe drug abuse research efforts. In addition to informing the teacher, these articles may serve as the basis for classroom debate or provide incentive

for seeking involvement of drug abuse specialists from local treatment programs in school educational activities. Dr. Jerome H. Jaffe addresses the importance of alternative and individualized methods of drug abuse treatment, while Dr. Joel Fort offers a "grass roots" therapy design. A theory of drug abuse as "seductive behavior" is proposed by Dr. Paul H. Blachly in a formulation of the problem that suggests specific opportunities for preventive intervention. Dr. Bertram S. Brown outlines directions and goals of the national drug abuse research program to develop new information for use in treatment and prevention.

The final and most extensive section of the *Resource Book*, "Drug Abuse Education: Principles and Practices," deals with matters relating to the specifics of the educational process as related to drug abuse. For the reader, the techniques and suggestions in those articles included constitute an evolution from the philosophical and descriptive in the first three sections to the practical in this final section.

An article by Dr. David C. Lewis and another by Dr. Richard Brotman and Frederic Suffet examine the goals and methods of school drug education programs and provide practical information on what approaches to use and what information to include. The concept of "alternatives" to drug-taking behavior is discussed by Drs. Gilbert R. Guerin and Allan Y. Cohen in two articles which emphasize that increased attention is needed to developing, communicating, and practicing alternative attitudes, experiences, and life styles which can fulfill realistic individual needs in lieu of drug use. Many in the drug abuse field believe the concept of viable and attractive alternatives to drug use may, in the end, be the only effective means to deal with the problem.

A unique new approach to preparing teachers to be meaningful drug abuse educators is outlined by Gerald N. Kurtz in an article on "The Social Seminar." Dr. Louise Richards summarizes methods and results of several evaluations of formal drug education programs and suggests what results may be expected. Two other articles by Drs. Robert C. Petersen and Sanford J. Feinglass, and one by David O. Weber and Joseph Fiorelli, which educators have pointed to as especially valuable, are repeated from the earlier edition of the *Resource Book*.

It is hoped that this publication will provide educators with valuable information about drugs and the drug scene and will act as a catalyst in provoking the commitment and involvement needed to make the classroom an effective focus of drug abuse prevention. Because teacher-student interaction is sustained over a relatively long period of time, a teacher can relate to his students in several ways and holds a particularly influential position in their lives. As with the initial edition of the *Resource Book*, the goal herein remains the development of skills for all educators that will enable them to open up the kind of dialogue and discussion that is a prime requisite in influencing youthful attitudes.

Muriel Nellis
Project Editor

I. DRUG ABUSE: INSIGHTS AND PERSPECTIVES

DRUG USE AND YOUNG PEOPLE: Their Reasons, Our Reactions

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Almost every class entering college or high school today contains a higher percentage of students who have used illegal drugs than did the preceding one. The custom is spreading from colleges and high schools down to the junior high and even grade schools. The use of marihuana and amphetamines, especially, is escalating apparently beyond control. Thousands of young people are demonstrating lack of judgment concerning drugs—they have some realization that these are dangerous substances, yet they take drugs anyway, risking their own health, their present and future mental functioning, the legal consequences if they are detected, and the further alienation from the adult world which drug use represents. And much of this is justified by the statements that "older people just have closed minds about drugs" and "drug use makes one more open-minded."

A few definitions of these phrases are in order to enable all of us to think along similar lines.

Open-mindedness is the capacity to look at issues in an unprejudiced way, to make up one's mind on the basis of evidence that is presented, and not to hold to previous points of view in the face of new evidence.

True open-mindedness means that the individual is ready to listen, think, compare and contrast, and otherwise keep his mind open to new ideas—certainly always open to discarding old ideas that have become outmoded in favor of new ones that have demonstrated their usefulness. A person who insists that he is open-minded but whose opinions can always be predicted ahead of time is exhibiting just the opposite trait. A person who is so "open-minded" that he is never able to make up his mind about any question is simply indecisive. In brief, the term does not mean that one should refrain from making decisions but rather that one should make a decision on the basis of available facts and then stick with it until there is a preponderance of evidence suggesting that the decision was incorrect.

In discussing how this relates to drugs, I should like to direct your attention to another question for a moment, and that is, Why do we consider drug abuse such a serious problem? Why is our reaction so strong and so emotional? We are professional people, presumably reasonably knowledgeable about the dangers of growing up in this world but believing that we have given our children a good background and reasonable standards and that they will withstand the vicis-

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situdes of adolescence. But we have reacted with shock, horror, and disbelief when learning that our children have been using drugs. Why are we getting so distraught? What does this indicate about our capacity to be open-minded on the subject of drug abuse?

An essential first step is to realize that many persons have an immediate, emotional reaction to the word "drug." They do not see the word neutrally, as denoting any chemical substance that changes the physical or mental state of a person who takes it. Instead, they equate it with "narcotic" or "anything illegal that people smoke or inject or swallow," or "something you get from the doctor when you are sick."

Drug Use in Our Society

In our society, the prevailing opinion is that drugs should be used only for medical purposes—to correct some condition that is causing the body to function incorrectly—and only under competent medical authority. A partial exception to this is that some drugs which do not have any great potential for danger are available without prescription, but in this case the "competent medical authority" is assumed to be the user himself. The two major exceptions to this rule are alcohol and tobacco, which our laws and social mores permit to be employed for purely social use. Other societies have at different times allowed various drugs to be used for social and religious purposes, and it is possible that in the future the use of other drugs will be permitted in our own society. But at present alcohol and tobacco are the only widely-used non-medical drugs that are legally permissible. And the essence of the "drug problem" is that more and more people are taking various drugs without medical supervision or for non-medical purposes.

I have said "people" rather than "young people" and added "without medical supervision," because the drug problem includes much more than young people taking drugs for non-medical reasons. They form only a part of the problem, and their part is a derivative from the main problem—the fact that we are a "pill-oriented," medicated society.

It is not uncommon for many Americans to use up to six mind-altering drugs each day—the caffeine in their morning coffee, nicotine in their cigarettes, diet pills, tranquilizers, alcohol, sleeping pills. Both young people and adults are bombarded by advertising that displays the magical power of drugs. There is little necessity, they hear, for preventive measures, for endurance, for self-discipline, for more rational modes of living: any trouble that you get into, drugs can get you out of it. If your trouble is too deep for non-prescription medicine, go to your doctor, who has available the miraculous pharmacopoeia of modern medicine—able to prolong life, instill happiness, and cure nearly all the ills of mans.

With this background, it is easy to see how today's young people grow up with the general conviction that drugs can solve anything, given the right prescription and the right dosage. The idea of changing their physical or mental state by swallowing chemical substances is thus an essential part of their cultural orientation. This is where the "drug problem" starts, in this social acceptance of drugs: it is not essentially a rejection, but rather an affirmation, of early teaching and propaganda.

Obviously, a drug used under proper medical supervision can be of inestimable, life-saving value. And probably an occasional self-prescribed aspirin or antacid does little damage. But the very complexity and potency of modern drugs has led to the complications of undesired side-effects and the proliferation of drugs to ameliorate the side-effects of others. Many physicians feel that the case for drugs has been over-stated. They are a temptation to the physician: he finds it easier to prescribe a drug to clear up a symptom than to spend time and effort, and possibly frustrate the patient, in trying to discover the cause. They are a temptation to the patient: he knows he can get relief without making the radical changes that may be necessary to root out the cause of discomfort or disease. And once they are in the hands of the patient, they present a temptation to him and his friends to take the problems of diagnosis and adjustment of dosage into their own hands—to decide who needs them, and when, and how much.

Drug abuse, therefore, involves the problem of all persons who may use drugs in an improper manner. The drug abusers include physicians who prescribe dangerous drugs without full knowledge of their effects, or use a strong drug to correct a condition which would right itself in a few days, or allow a patient to take a drug indefinitely with no follow-up. They include housewives who become dependent on diet pills or tranquilizers. They include business and professional men who cannot get through the day without two martinis at lunch,

or rely on amphetamines to get them through a difficult project. They include all the people who demand a broad-spectrum antibiotic every time they get a cold.

Components of the Drug Abuse Problem

The basic effect of drugs is to change the mental atmosphere in which people live and to help them escape from some form of mental pain—unhappiness, loneliness, feelings of alienation, depression, and the inability to resolve personal or interpersonal conflicts. Marihuana, which often produces peacefulness, contentment, and euphoria, is the drug which many young people feel is the perfect antidote to mental pain. Narcotics, barbiturates, and alcohol, all of which are central nervous system depressants, cause an individual to forget his troubles for the moment. Paradoxically, so do the stimulants. They may cause nervousness and paranoid reactions, but they also make the individual stimulated and self-confident, and give him a surge of energy in which he may respond actively without worrying about himself or the consequences of his actions. The stronger hallucinogens, too, may be used as an escape from mental pain, or at least as a diversion from everyday troubles.

But the desire to escape from unhappiness is not sufficient explanation for the epidemic of drug use that has erupted in the past few years. Another important aspect is that drug use, after it became established in certain key areas of life important to young people, became a symbol of the things they were trying to accomplish and the manner in which they were trying to accomplish them—peer group identification, adolescent rebellion, and the need to experiment. Because drugs have acquired this symbolic status, they have also acquired a social currency and sometimes function as a "coming-of-age" rite. Group identification and the sharing of experiences with friends are important for young people, especially in a world in which they feel cut off from everyone except their peers.

But one of the main reasons for the drug abuse problem is simply that drugs are so readily available. Once the idea of drug-taking became fashionable, a huge potential market was established, and the suppliers were quick to grasp their opportunity. This easy accessibility has meant that there is a deceptively easy answer to all the adolescent's problems right at hand. For a few dollars he can escape from his problems, defy society and authority, identify with his peer group, imagine he is discovering his true self, and enjoy the thrill of a dangerous and unknown experience, all at once. The mystique of "drugs can do anything" is present from the medically-oriented culture; the desire to escape from personal trouble and to revolt are often omnipresent; and the dangers are seen only as an additional challenge.

Realities of "Mind Expansion"

Special claims have been made for the hallucinogenic drugs LSD, marihuana (which, in the form generally available in this country, is properly classified as a mild hallucinogen), the naturally-occurring mind-altering substances mescaline and psilocybin, and various chemicals synthesized in the laboratory. These drugs are claimed by some persons to have the capacity to enlarge the scope of users' mental functions. Others claim that rather than enlarging mental functions, the drugs restrict them.

The term "expansion of consciousness" is a very indefinite one, but as nearly as I can determine, it is based on the idea that there are vast reaches of the mind which have not yet been explored and which are usually not consciously functioning. Many people feel that much of what is wrong in the world today could be improved if new areas in man's mind were opened up and new goals seen and adopted. Marihuana and, especially LSD are thought able to open up these new areas and make manifest new modes of knowledge and experience—hence the popular adjective, "psychedelic," or mind-manifesting or mind-distorting. They are supposed to aid in creativity, give access to facets of the mind that usually remain hidden, and reveal new dimensions of truth. The drugs' advocates are searching for new values: heightened esthetic response, subjectivity, introspection, self-knowledge and understanding of others, nonverbal experience, pleasure, and creativity. Drugs, they feel, are able to furnish these in a way that is quick, reliable, and reasonably safe.

One specific theory of how this is accomplished is that very early in life the mind sets up screens by which it organizes its perception. It sorts out and classifies the myriad sensory stimuli by which it is being contantly bombarded, and rejects or represses many of them so that they are never consciously perceived at all. It creates the boundaries of time and space, and the ideas of "self" and "not-self."

Some persons feel that these are artificial categories which hide and distort reality and "im-

prison" the mind in verbal habits and formalities. Most persons who have studied the human mind feel that they are, rather, necessary categories for a true perception of the world. At any rate, most of us think of them as basic. We live in a world of dichotomies and of cause and effect. We believe in Euclidean geometry and Aristotelian logic; we classify and sort, assign dates and labels, create clocks and calendars. We believe that the self is separate from the external world, and that our senses reveal with reasonable accuracy what is happening outside us.

We have had no evidence that extensive use of drugs for self-realization, increased creativity, or attainment of mystical states of consciousness has been beneficial for more than a few isolated individuals. There is no doubt that many drug users are sincerely interested in achieving greater creativity; but creativity is generally regarded as including productivity. And what happens to people who become set in a pattern of drug use is that from then on nothing happens. The great philosophical theories are developed, but they are not written down; the great paintings are envisioned, but no paint is applied to canvas; everything draws to a halt.

The other abused drugs have the same poor record in producing any kind of real mental freedom, but they are still the hope of many persons who are not satisfied with themselves and are unable to change. Such drugs as barbiturates and alcohol may temporarily depress conflict, but they make a person less rather than more effective in dealing with his life. Tranquilizers have made life bearable for large numbers of mentally ill persons, but even those patients who respond well to them may develop an attitude of indifference towards their symptoms, their surroundings, and their personal state. Psychoactive drugs rarely increase awareness of the world; they are much more likely to contract people's lives, negate conflict, and deal with stress by dissolving it rather than by meeting it with fully human and creative awareness.

Psychosocial Adjustment

The effect of drug-taking in producing persons with closed minds is evident not just in the chemical alteration of thinking. Also of great importance is the effect which the drug experience and the identification with a drug-taking subculture has on the individual's world outlook. This includes not only his perception of the world but also his relations with other people, his responsibility to others and to himself, his commitment to values, his tolerance, his ability to understand other persons with whom he may not necessarily be in agreement.

Our experience has been that persistent drug-taking almost always has a negative effect on these qualities. The person who feels that he has discovered his own "way" in drugs very often generalizes to claim that this is the only way and that everybody ought to follow it. With all the zeal of a new convert, he becomes a missionary of the drug culture. He urges his friends to try drugs; he engages in acrimonious debate with those who do not wish to try drugs or whose experience with them has been negative; and he associates as exclusively as possible with those who share his beliefs about drugs. Often he becomes a supplier, either because he needs the money or because he feels that making drugs more generally available is a way of solving the world's problems and an action of great value within his own ethical system.

But while he "expands his mind" and the minds of his friends, his mind becomes closed to other forms of experience. He feels that only those who have had drug experiences are fully human; he denies that anyone else's approach to life can have real value. And despite his commitment, he often suffers from deep fears that he has perhaps not found the ultimate way after all. He tends to withdraw further and further from any idea or action which might tend to demonstrate values in a non-drug experience. The fact that drugs are illegal, and that he is therefore forced to dwell more and more in a subculture outside the law and the ordinary social framework, tends to increase the feeling (often assuming proportions of paranoia or delusion) that he has found the true path to salvation. Drug use, first seen as a way of opening their minds to new truths, becomes instead the instrument by which their thinking is regressed and their minds closed to considering any other path of achievement.

Regulation of Drug Use

The regulation of drug use is intimately involved with the age-old problem of the appropriate balance between the rights of the individual and the right of society to keep intact the web of morality which enables it to survive. Great misunderstanding has occurred because those who stress the rights of the individual and those who stress the rights of the society have found such

difficulty in understanding their own and other's premises and in communicating with each other.

It seems to me that our young people generally underestimate the danger to society that a drug-intoxicated person can be. A drug may be taken quietly at home, but if there is free access to that drug there is no control over whether it is taken in an isolated setting or whether the user, despite prior intentions, will become a public hazard. Amphetamines, for example, have caused many instances of violence. Many of the other abused drugs cause drowsiness, slowed reflexes, and mental clouding. A person in this condition, driving a car or even trying to walk around in a crowded city, can be a menace to anyone around him.

In fact, hardly any action involves only the person who performs it—everyone lives in direct or indirect interaction with other persons and with numerous social groups. Urban crowding and economic interdependence intensify the number of such interactions and the potential for good or ill in each.

When a young person says, "The society has no right to tell me what to do in my private life," he does not take into account these fundamental facts of human interaction. The society in which he lives does, according to the philosophy generally subscribed to today, have the right to protect itself, to act in its own best interest, and to regulate the lives of its members in those areas where damage can result. Young people can see this in regard to laws designed to protect individual members of society against personal attack or loss of personal property, in laws regulating traffic and economic transactions, and in laws governing the structure of social units. They have been particularly able to see the legitimacy of the government's role in protecting and assisting the less advantaged members of the society. They must learn to see that their own acts of drug abuse can have a damaging effect on the rights of others.

Freedom and Responsibility

Young people may argue back that they have an "inalienable right" as human beings to determine their own fate and to limit their productivity, even destroy themselves, if they wish, and that their human rights supersede the rights of the society. It is no use to argue here that we are "right" and they are "wrong," for these are questions of value which lend themselves to discussion, not to scientific proof. But we should at least be able to enter into dialogue not over "rights" and "obligations" but about the nature of the society and to what a person's "humanness" entitles him. It will help, in this case, if we remember that adolescents are often very unsure of their position in society, their goals, and their rights, and that they feel somewhat desperate about clinging to the few they do feel they possess.

Both we, and the young persons with whom we are attempting to communicate, assume that the basic values involved are freedom and responsibility. Where we differ is in the means of achieving them. Young people are often inclined to think that if the other factors are working in his favor, a man is basically inclined to be responsible; but this is not always so.

Maximum freedom depends on finding those minimal restraints on individual freedom which are necessary to ensure freedom for everybody—as the Harvard Law School graduation ceremony calls them, "the wise restraints that make men free." It involves thoughtfulness, caring, being other-people-centered rather than self-centered, controlling impulsive action which may have untoward consequences. A free person must be one who has learned to predict what the consequences of his action may be. Such prediction and regard for consequences are also necessary criteria for mental health, because the person unable to carry out these functions is likely to be suffering from a character disorder which makes him unable to see the effects of his actions on other persons.

One freedom which is often overlooked is freedom of choice—the ability to use all available facts and all one's facilities in arriving at a decision. The protection of this freedom is an important function of the society. When a young person is just coming to the point where he makes basic choices about his own identity, his relationship to others, and his methods of problem-solving, it is vital that he have all his faculties and know the full range of possibilities. Drugs may destroy freedom of choice before it is ever exercised and may prevent many potentialities from ever emerging. A pattern of retreat from problem-solving and decision-making into a conflict-free world of drug use is especially dangerous when established early in life, because it cuts off all other possibilities. This is why we are especially concerned with drug abuse occurring among younger and younger groups.

Conclusion

There are two general points that I would like to raise, in conclusion, for your consideration. The first is that the essential task is education, of both young people and adults, concerning the reasons for drug-taking, rather than just the reasons against it, and education also concerning the effects and the dangers of drugs. Proper knowledge will have the practical effect of defusing the problem emotionally and can make possible the passage of more rational drug laws and a more widespread awareness that drug abuse is a symptom, not a self-defined condition. The second is that we must begin to understand what our young people are saying, the meaning behind their words and actions. We must convey to them a new sense of their being needed and of having a necessary place in this world: only if we do will we give them an incentive to face reality and accept the challenges of the modern world and of their own maturity.

People have always looked for shortcuts to efficiency and wisdom, and now that knowledge is increasing so much faster, more and more people are thinking that shortcuts such as drug use are necessary. But even if drug use does sometimes lead to increased knowledge in the sense of acquiring new raw data, it has a negative effect on the person's ability to use the data he has acquired. There is a great difference between knowledge and wisdom. Whithead called wisdom "Common sense on a large canvas"; Karl Deutsch has said that concern without competence produces quacks, while competence without concern produces hangmen. Wisdom is not something that can be acquired by any form of wishful thinking or any form of chemical reaction within the brain cells. It can only be acquired by attainment of a rich mixture of knowledge, competence, compassion, intellectual flexibility, objectivity, and patience. Whatever else may be needed, drugs are not a part of the answer.

YOUTH IN REBELLION: Through Time and Societies

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The active rebelliousness of youth which seems so characteristic of this day and age is not unique. In ancient history an observer of the Egyptian scene recorded: "Our earth is degenerate. . . children no longer obey their parents." We know that Socrates expressed concern about the young men of Athens: their long hair, their indolence, and their disdain for adult values.

The historical view, over centuries, does not help us appreciably in understanding rebelliousness in the "Now" generation; rather we need to use historical perspective in a somewhat different manner.

Two kinds of historical perspective are relevant, as they interact with each other: developmental and social. The first of these refers to the psychosocial progress of the individual through life stages from infancy to old age. The second is the state within the society at a particular time. Is the society stable or changing, and if the latter, how extensive is the change and of what kind? These two historical perspectives when considered together provide some clues about the meaning of rebellion.

A good deal is known about development during the life cycle, especially for the periods of childhood and adolescence. Adolescence is the greatest time of change, physically, emotionally, and socially, of any point in the life cycle, with the possible exception of infancy and early childhood.

Erik Erikson has caught the key phrase, in labeling the major psychological task of the adolescent, as that of forming a stable identity. He must find out who he is, as separate from both his family and peers. This involves an awareness and appraisal of his skills and aptitudes, and of his location in the network of social roles that refer to work, to procreation, and to his place in society. He must come to some sense of what his life means, of what shall guide his behavior, and of what intrinsic worth he feels himself to have.

This familiar description has a universal validity through time and across societies. However, there still is room for important variation. The manner in which a sense of identity is achieved and movement made into adult roles depends on what is happening in the society, or in the social cycle. Social context has a profound influence on the kind of events that are likely to occur, on reactions that the adolescent is likely to have in the process of forming a stable identity.

Adolescence in a Settled Society

The transition through adolescence is relatively smoother when certain conditions exist in society. First, there must be meaningful adult roles. Meaningful signifies a clear awareness by both adolescents and adults of what people do in a given role, the rewards and liabilities associated with performance of that role, and the perceived relevance of role activities to the value system and goals of the society. The greater the number of adult roles a youth finds meaningful in his social context, the smoother the transition through adolescence is likely to be.

Second, there must be clearly defined transition points, or social activities that signify to the individual and to the community that change in status has occurred. The anthropologists refer to such events as rites of passage.

The third requirement is stability and consensus in the value system of the society. Daily activities must make sense in terms of the value system.

Excerpts from "Youth In Rebellion: An Historical Perspective," presented at the AMA Council on Mental Health 14th Annual Conference of State Mental Health Representatives ("Drug Abuse in the 'Now' Generation"). Drake Hotel. Chicago, Ill., March 15–16, 1968. Reprinted with permission of author and publisher from *Drug Dependence: A Guide for Physicians*, 1969. Chicago: American Medical Association.

There must be social events in which people participate that express the value system. Most importantly, the value system must provide a set of acceptable answers to the major questions asked by all men: Why am I here? What meaning is there to my life? How do I relate to other people? What place do I hold in the universe? Where am I going after death?

Historically, these conditions have most often been met in settled societies, though not necessarily in simple or primitive ones. India of a few centuries ago provided one example. The caste system limited the range of adult roles that were open. The majority of adolescents knew that their adult roles would be the same as their father's or mother's and they knew what activities would be entailed. There was little freedom, or openness in the system, little opportunity for or allowance of rebellion.

The system of values in this example emphasized an orientation toward the past and therefore a reliance on tradition, the importance of the social group and submission of the individual within the group, and the importance of natural and supernatural forces over those of man.

Adolescence in a Changing Society

In contrast, the transition through adolescence is more likely to be a time of crisis, upheaval, and rebellion under different social conditions. Prominent among these is social change. This occurs when there are significant shifts in political power, in the economic structure of the society, when there are important alterations in the value system, and when the social expectations for behavior in adult roles become fuzzy or confused.

The particular content of a value system, that is, the kinds of things that are emphasized, is also important. Social and personal upheaval is more apt to ensue if dissent is part of the cultural heritage, if man is regarded as able to control and alter nature rather than be subject to it, and if change and progress are considered a goal to be achieved rather than a drawback to be avoided.

When these social conditions are present, the likelihood of crisis and rebellion during adolescence is enhanced. Adult roles are not clearly perceived in terms of expected activities. At the same time, the range of roles may be beyond the adolescent's experience or knowledge. Furthermore, the multiplicity of choice may be overwhelming at a time when he unconsciously feels the need for order and structure. Transition points, the rites of passage, receive less attention and less social endorsement at times of social change and value alteration. The lines of demarcation between the child and adult roles are less clear. Hence the adolescent may be pulled in two ways, given adult responsibilities without accompanying adult status and without sufficient social rewards.

Crisis, however, does not always lead to rebellion. We need only to refer to our knowledge of defense and coping mechanisms to spell out the potential consequences. One reaction can be regression and disintegration. This is likely to occur in psychologically vulnerable individuals when social disruption is severe. We noticed it in the United States when the plains Indian tribes were driven onto reservations and prevented from following the whole fabric of life they had known in the past.

Passive withdrawal also occurs. Here there is a resignation, a lack of effort, a withdrawing in upon the self as if to still the feeling of anxiety and crisis.

Rebellion is one form of active engagement with the environment and involves a mobilization of aggressive energy for outward thrust. It can easily become destructive and erupt in a blind tearing of the fabric of social order.

Rebellion can also have a coping rather than a defensive quality and be constructive. Throughout the ages man has changed his environment in order to find new solutions for perceived deficiencies in the past. Though to the adult world this kind of rebellion may have radical aspects, it often contains the elements of a more viable and stronger social structure.

Technological Changes and the Quality of Life

Few would deny that significant changes are taking place in the social structure and general fabric of life today in the United States and in other countries. These changes are based, at least in part, on technological advances which have come with ever increasing rapidity. Three major areas are affected: The production and utilization of energy: control of disease and the distribution of health services: and development of rapid communication and transportation networks. Many people have likened the situation to an explosion of knowledge, with technical advances happening so fast that social changes can hardly keep pace.

One major result is a shift in work roles and the meaning of work. Until recent times a great deal of energy needed to be expended on life-

sustaining activities, on obtaining the simple necessities of shelter, food, and clothing. The idea of the family as an economic unit was a reality.

The coming of the affluent society also means a reorientation of the social structure to activities that are not work oriented. At the moment we are only on the threshold of the work revolution, aware that life in the future is going to be very different but not certain how satisfactions will be derived, or by what values we will live. The coming generation is quite aware of our dilemma and of the resulting confusion about the dimensions of adult roles. They raise questions about the right kind of educational preparation for the future. They ask if we can justify the value of a classical education. They want to have a part in running the educational structure because they do not think our ideas or procedures are necessarily relevant to what lies ahead. They say that our educational procedures are at the crossroads. Within this kind of a social context there is greater likelihood that for some adolescents there will be turmoil, crisis, and the possibility of rebellion.

We might view this situation from a slightly different angle by developing this idea: During the Middle Ages, western civilization could be characterized as the "Age of Religious Man." Life was hard, often brief, but found meaning through attention to the spirit and support through the sacraments of the church. Religion was the organizing force in life. With the advent of the Industrial Revolution, the focus shifted to economic activities, and for several centuries the dominant theme was the "Age of Economic Man." Political, social, and even moral activities were intimately related to economic factors. We are still in that age, but with indications that we may be moving into a new one which might be called the "Age of Psychological Man."

Our inner life, that of the mind and personality, assumes an increasing share of our attention. We know much more about the relationship between mind and body than ever before, and we are beginning to develop theories about self-actualization and positive health. Others before us have thought about these things, but society did not seem ready for them.

Now there is the leisure and freedom to turn attention to mental and emotional forces. As a result, the younger generation questions the behavioral content of adult roles, and the values associated with these roles. There is uneasiness about manipulation of the public through advertising, about impersonal and vicious competition in business. Young people see adults come home from the world of work beset by tension and wonder if the goals that push men this way are the right goals.

Life is also being altered by the swiftness of communication and transportation. A sense of participation and immediacy of experience accompanies events of powerful emotional significance. To cite an example, a few years ago the country went through a weekend of mourning over the death of President Kennedy only to witness the killing of his alleged assassin on TV. In a situation like this the results of electronic circuitry make it possible for each of us to "be there." There is a sense of involvement, but there is also a feeling of lost privacy. Feelings are mixed. Fear that barriers to one's inner self can be stripped away for all to see may or may not be allayed by the increased sense of communication with other people who may be quite unlike ourselves. We know that this development is no passing trend, that it will increase rather than go away, and that life patterns must be developed to handle it.

The discussion so far has involved quite general factors that affect most of the civilized societies in the world today. Two others that are more specific to the United States are important in understanding rebellion. The first concerns changes in child-rearing practices.

One of the poignant notes we hear from adolescents today is that they have not had enough control, that parents have not taken a stand at appropriate times. Often they wish a father would say no; clearly, firmly, and with assurance about the reasons for no. They think adults have often been confused about child rearing and have lacked direction. Consequently they wonder if adults really care for them.

A second factor comes from the American dream. Imbued in our culture is the idea that one's station at birth is no bar to achievement of political power, wealth, or artistic and intellectual contribution to society. Many of our folk heroes came from obscurity to positions of prominence, and still continue to do so. Couple this with the fantasies and passions of adolescence, and "the world is your oyster," as the saying goes, opportunities are open, there are infinite potentialities. The effect of the technological revolution only serves to enhance this feeling of omnipotence.

Adolescent Response to Crisis

To review for a moment the argument to this point. A sense of crisis during adolescence and even early adulthood is more likely when the surrounding society is in a state of change, when the value system, the content of roles, and meaning of activities are changing. This is true of our society right now, under the influence of rapid technological and economic advances plus the effect of certain American values and of our changes in child-rearing patterns. The immediacy of communication further enhances the feeling of change and the possibility of crisis. Not all adolescents feel a sense of crisis, nor of those who do feel it not all act defensively or destructively. We are concerned, however, about those who do have trouble and the form it takes.

A feeling of crisis is a very personal thing, much the same as the experience of illness. In an acute state attention is directed primarily toward one's own feelings, reactions, and activities with a resultant withdrawal of concern for others. It takes a number of forms. One is represented by the feeling that things are owed a person without his doing anything to earn them. In an affluent society, as in a family setting which overindulges a child's wishes, narcissistic entitlement may develop more easily and serve the fantasy of omnipotence. It arises more naturally from a tradition where there are diffuse limits in child rearing and where adult roles and responsibilities are unclear. It contains an element of desire for immediate gratification. Already characteristic of adolescence, this desire is enhanced by the sense of participation and involvement that comes from modern communications. It is no wonder that we refer to the "Now" generation.

Narcissism may take another form in crisis, that of destructive rebellion, the kind that is irrational, that seeks to destroy for the sake of destruction. Persons who react in this manner feel great frustration and alienation, a gulf between their sense of entitlement and the realities they can achieve.

Of more immediate concern are those whose narcissism takes the form of withdrawal, or regression to the real or fantasied gratifications of earlier phases of development, including the belief in magical solutions to problems. Drugs provide one avenue for withdrawal, whether into oblivion with heroin, or the mind-blown world with LSD, or the speeded-up experience with amphetamines. A type of withdrawal also occurs with "pot," in which reaction time becomes retarded and life seems to stand still. Drugs represent one way of responding to crisis. The danger lies in abrogating the task of maturing in a rapidly changing society for which there is no blueprint providing safe guidelines into the future.

We can lose perspective easily and feel that all adolescents are moving toward personal disintegration, withdrawal, or destructive rage. It is easy to forget that the majority may be taking a more constructive path, even though it appears to us as rebellion. We may not like their dress, or customs, or manner of rebelling, or their questioning our values. The sense of security in our adult position may be threatened. Perhaps, however, a significant number of the younger generation feel a sense of urgency about the world which we do not understand fully and a conviction that social change must occur more rapidly than at any time in the past, if mankind is to survive. They could be right! They will not find the answer in drugs, for they will, in the long run, be too busy throwing their energies into confronting the world with new solutions to social and political crises we have not foreseen.

HIGH SCHOOL DRUG USE: A Survey With Implications For Education

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Current public opinion seems agreed that the use of non-alcoholic drugs has increased rapidly over the past five or six years. Certainly, arrests for possession and trafficking in marihuana have increased greatly since 1963. In 1963 there was one arrest for marihuana possession in Toronto, but this number changed to 360 in 1967 and to 569 by 1968. Some people have wondered whether this change is really due to better police surveillance or to their resources having been freed from a concern with heroin addiction. Some of the change may be accounted for in this way, but probably very little. Aside from police records and certain unsystematic and anecdotal information from teachers and youth workers, there is no solid evidence to support these assertions of change. Until very recently, too, there was no information whatever on the extent of non-alcoholic drug use in Canada, so of course trends could not be described at all. My aims in this paper are to indicate what knowledge exists of the extent of drug use in high school and college populations, and to indicate briefly what educational or preventative steps are possible.

In 1968 we began an epidemiological study which attempted to describe the nature and extent of drug use in schools in Metropolitan Toronto. This survey was an effort to determine the frequency of use of all commonly available drugs such as alcohol, tobacco, marihuana, LSD, barbiturates, tranquilizers, and stimulants. This study looked at the distribution of drug use in various grades and for each sex separately; it also looked at various social and behavioral variables associated with drug use. The study was concerned with drug use and not with abuse, addiction, or dependency.

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The methods used in this survey were group discussions and anonymous questionnaires. We employed two methods of gathering data for several reasons. First, we wanted to have more than one method of estimating the prevalence of drug use; and second, we used the discussions to provide questions for the questionnaire. At present, no one is certain how reliable data on drug use can be obtained. Questionnaires are typically used, but one is never sure how accurate the information obtained can be. In this study we asked students in the group discussions to estimate the number of drug users among their friends, and in the questionnaires we asked people about their own drug use.

Methods

Subjects

The subjects in this study were drawn from all areas of Metropolitan Toronto. They were students in grades 7, 9, 11, and 13; both males and females were included. We left out the even-numbered grades chiefly because of the trouble and expense of including everyone. We thought that the odd-numbered grades would be sufficient to cope with.

All six boroughs of Metropolitan Toronto cooperated in this study, as did the Separate School Board and several private Roman Catholic high schools. The schools used in the survey were randomly selected from the total number of high school districts for each borough, and each borough contributed study districts in proportion to their part of the total. We used 20 districts in all. Within each school classes were selected at random from each of the grades 7, 9, 11, and 13 until 120 students were obtained. All students who participated did so voluntarily and with the consent of their parents. These students were asked

to fill out the questionnaires; however, group discussions were held first.

Group Discussions

Before we began the collection of questionnaire data, we held group discussions, each with six to eight high school students from the same grade. In all, 147 group discussions were held. We hoped to have one group for males and one for females for each grade in each high school district in which we worked, although in a few districts we did not have time for groups. For these groups one half of the students were chosen by their own classmates and one half were chosen at random, out of class lists.

The purpose of the groups was to have students talk freely about their attitudes, feelings, and behavior related to drug use. We hoped to gain valuable information which would allow us to construct a useful questionnaire containing all of the relevant questions about drug use and its associated characteristics. We also hoped that the members of these groups would come to value the research and would convince their classmates to cooperate in completing the questionnaire as carefully as possible. Our last purpose in having group discussions was to have another method of estimating the prevalence of drug use. At the end of the group discussions, each participant was asked to say how many persons of his *own sex*, in his *own class* he knew had used various drugs. In this study, then, we asked people about other persons' drug use and about their own. We thought that this would provide a very good check on the accuracy of the data obtained from the questionnaires.

The group discussions were entirely confidential, no schools or persons were identified during the discussions, and it was made very clear that only the researchers would have access to the material. It was stressed that Addiction Research Association had no connection with school or teachers or police. No teachers attended the group discussions, and most of them were held outside of the school—in community centers for most.

The groups selected by popular vote proved to be more animated than those randomly constructed. In general, the elected groups were more active, sophisticated, and controversial. Most groups were affairs in which members involved themselves intelligently and actively in discussion about drug use among high school students.

All group discussions were taped with the permission of the group members. No individuals or schools were identified in the tape. The leader attempted to remain passive and have the members lead and maintain the discussion. A nonjudgmental approach was taken by the leaders, and anyone was allowed to say what he pleased, except that names could not be mentioned.

Questionnaires

After the group discussions were completed, questionnaires concerning all types of drug use were given out to students in each of the selected classes; of these, 6,447 were completed. These questionnaires were completed in each school on the same day so as to minimize contact between students. Questionnaires were all voluntary, and only students who had the consent of their parents participated. Almost no one who had parental consent refused a questionnaire. The questionnaire covered the following topics:

1. Demographic characteristics, such as age, sex, occupation of parents, etc.
2. Frequency of usage of drugs such as alcohol, tobacco, marihuana, LSD, barbiturates, stimulants, tranquilizers, and opiates.
3. Various attitudes toward drug use and drug users.
4. Sources of information about drugs.

The questionnaires were administered by a member of the research group. No teachers or principals were present, and students were asked not to sign their names so as to retain anonymity.

Results

This study is the largest ever attempted for drug use among high school students. It is the only published study for this age group. The first result of importance is that the two methods of estimation gave almost identical results for marihuana use and, hence, one can have considerable confidence in the data.

Drug Use Rates for the Total Sample

Table 1 shows the average frequency of drug use for the total sample. The rates are for use during the six months prior to the investigation. It can be seen that alcohol and tobacco are the most frequently used substances (46.3% and 37.6%), respectively, and that the use of all other drugs is less than 10 percent. Of the illicit drugs, marihuana was used by 6.7 percent of the grade

TABLE 1

INCIDENCE OF DRUG USE BY GRADE

Percentage of Students Using Drug at Least Once in Last Six Months

Grade	Tobacco	Alcohol	Marihuana	Glue	Barbiturates	Opiates	Stimulants	Tranquilizers	LSD
7	24.6	22.9	2.6	7.2	1.3	1.1	4.3	4.8	1.1
9	44.3	41.6	10.8	9.4	3.9	3.0	9.4	11.4	3.9
11	46.6	59.7	8.9	2.6	4.4	1.8	7.8	11.6	2.1
13	39.7	70.9	7.5	0.7	3.8	1.0	5.6	14.6	3.8
Total	46.3	37.6	6.7	5.7	3.3	1.9	7.3	9.5	2.6

7 to 13 population and LSD by only 2.6 percent. It should be pointed out, too, that the variation in drug use across the high school districts was very large. Marihuana use varied from 3.19 percent to 11.8 percent, glue sniffing from 1.8 percent to 14.2 percent. LSD from 0.4 percent to 5.3 percent. The smallest variation by district was found for alcohol (40.1% to 60.0%) and tobacco (27.9% to 47.2%). It is clear that rates of illicit drug use vary markedly from one area to another, in a manner quite unlike that of the socially acceptable drugs.

Drug Use Rates by Grade

An expected finding was that rates of drug use would vary substantially by grade. Table 1 also shows the distribution of drug use by grade. Smoking involves 46.6 percent in grade 11, and drinking as many as 70.9 percent in grade 13. The use of illicit drugs is less frequent, but marihuana use goes as high as 10.8 percent in grade 9 and glue use as high as 9.4 percent in grade 9. Opiates, barbiturates, and LSD are used by small minorities of the students.

It can be seen that all types of drug use are less frequent in grade 7 than in the other grades. Only glue use is relatively high in grade 7, and even with glue grade 9 is the peak. There are several patterns which can be more easily seen from Table 1. Use of marihuana, stimulants, opiates, glue, and other hallucinogens (other than LSD and marihuana) is relatively low in grade 7; this usage reaches a peak in grade 9 and declines in grades 11 and 13. It can be seen, too, that tranquilizers and alcohol are least frequently used in grade 7 and increase steadily over the grades to reach a peak in grade 13. However, tobacco and, less strikingly, barbiturates show a sort of inverted J curve with the peak at grade 11, less frequent use in grades 9 and 13, and very little use in grade 7.

Frequency of Drug Use Among Users

The frequency with which various drugs are used suggests that some are associated with chronic use and others primarily with experimentation. Among all drinkers (Table 2) more than twice as many (33.8%) drank only once or twice per month as drank more than three times per month (12.5%). This is also true for students in all grades, even grade 13, where most students drink. A similar but less striking relationship holds for smoking (Table 3), as only 14.5 percent smoke as many as 20 cigarettes per day and 23.1 percent smoke fewer than 20 per week.

For drugs such as opiates, LSD, other hallucinogens, and barbiturates, and curious experimenters and regular users are similar in number, although not over 2 percent for any drug (Table 4). For tranquilizers, stimulants, and glue, the experimenters are considerably more numerous than the regular users (Table 5). It is only for

TABLE 2

FREQUENCY OF ALCOHOL USE

Frequency (Times per Month)

	0	<1	~2	~3	4+	Blank	Total
Percent of Students (All Grades)	53.7	24.5	9.3	5.0	7.5	0.0	100.0

TABLE 3

FREQUENCY OF CIGARETTE SMOKING

Frequency (Cigarettes per Week)

	0	*1–5*	*6–10*	*11–20*	*20+*	*Blank*	*Total*
Percent of Students (All Grades)	62.2	14.9	4.1	4.1	14.5	0.2	100.0

TABLE 4

FREQUENCY OF DRUG USE

Frequency (Times per 6 Months Period)

	0	*1–2*	*3–4*	*5–6*	*7+*	*Blank*	*Total*
Tranquilizers	90.3	6.1	1.4	0.5	1.5	0.2	100.0
Stimulants	92.6	4.4	1.1	0.5	1.3	0.1	100.0
Marihuana	93.1	2.8	1.3	0.7	1.9	0.2	100.0
Glue	94.0	3.7	0.6	0.3	1.1	0.3	100.0
Barbiturates	96.1	1.9	0.4	0.2	0.8	0.6	100.0
LSD	97.4	1.2	0.4	0.3	0.6	0.3	100.0
Other Hallucinogens	97.4	1.1	0.4	0.1	0.4	0.6	100.0
Opiates	97.9	1.2	0.3	0.1	0.3	0.2	100.0

TABLE 5

INCIDENCE OF DRUG USE BY SEX

Percentage of Either Sex Using Drug at Least Once in Last Six Months

Sex	*Tobacco*	*Alcohol*	*Marihuana*	*Glue*	*Barbiturates*	*Opiates*	*Stimulants*	*Tranquilizers*	*LSD*	*Other*
Boys	42.9	51.7	8.6	7.4	3.3	2.2	8.4	8.1	3.4	2.6
Girls	31.1	40.4	4.0	4.2	2.8	0.9	5.3	10.4	1.2	0.7

marihuana that regular users (3.9%) outnumber experimenters (2.8%). This is portrayed in Figure 1.

Group Discussions

The analysis of the group discussion tapes was done in terms of conflicts and catalysts. A conflict unit was defined as a stated perception by some person of a barrier to personal gratification. A catalyst was defined as the vehicle used to discuss the conflict. Barriers were the perceived blocks to personal gratification. The common catalysts were drugs, smoking, alcohol, sex, the future, religion, hippies, school, "what bugs you," clothes, and lastly, love, marriage, and dating. The most important barriers were self, peers, home (parents), school, the law, mass media, experts, society, and pushers. Of course, the most common topic of conversation and catalyst was drugs. The groups were structured in this way and many of the leaders' questions concerned drug use.

Most of the barriers creating conflict are internal or connected with the self, and this general state-

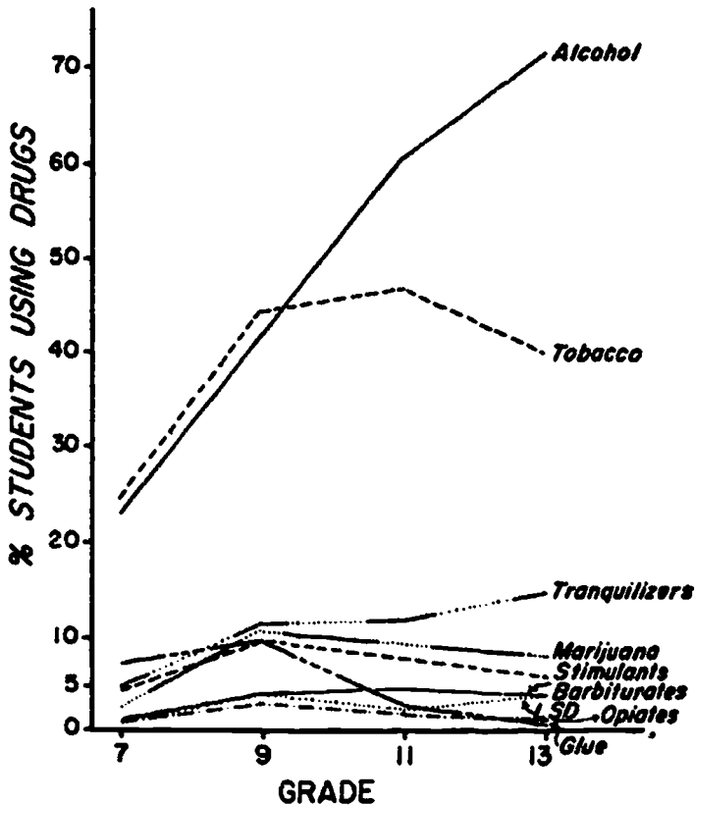

Figure 1.

ment is particularly true of drug-taking conflicts. As students move from grade 7 to 13, discussions about drugs are less concerned with parents and more concerned with peers. That is, the locus of control over drug taking probably shifts from parents to peers, with most of this shift occurring between grades 7 and 9 for males and somewhat later (9 and 11) for females. This is an interesting finding, of course, when we remember that grade 9 is the peak age for most types of nonalcoholic drugs.

General Conclusions

It is clear from these findings that *nonalcoholic* drug use is a frequent activity among high school students. However, alcohol and tobacco are *still* the most important drugs. Drugs such as marihuana, LSD, glue, and others, are consumed by a *minority* of the school population: they have not taken over from the older drugs, and there is little reason to see a "drug epidemic" or "drug rampage." Everybody is not doing it—yet, and those who do are rather different from those who do not. This sort of study helps to define the target population for rehabilitative or educational measures.

What Is Still Unknown?

A single study, of course, cannot answer all the relevant questions about the extent of drug use; many questions remain to be answered. We now know about drug use in grades 7 to 13, but we know little about the use before that. It seems clear that some students are initiated to drug use as early as grade five or six; this is particularly the case with solvents. Also, we know little about the way in which students stop using drugs, or about what enables so many students to refuse or avoid nonalcoholic drugs.

Educational Implications

This study of high school drug use suggests some approaches to education about drugs. The first major concern is at what age drug education should begin. This study indicates that some experimentation with drugs, especially tobacco and glue, is beginning before the student enters high school (in grade 7). It is clear, then, that drug education should start early. In Ontario it now starts at grade 10 but, as mentioned previously, the peak rate for most drugs was grade 9. Students, themselves, also expressed the view that drug education was begun too late to offset drug usage.

The *type* of instruction which will be most beneficial and effective appears to be one in which the student plays an active role. Students became rapidly and easily involved in the discussion group part of this study, and there was a free exchange of valuable information. Of course, open discussion is not all that is needed; authoritative reference material and some formal instruction is very necessary. We found that students have also acquired a good deal of inaccurate and misleading information. But it was clear from the tapes of group discussions that, at present, there are communication barriers between teachers and students on the topic of drugs. Students felt that teachers were too opinionated and there was considerable distrust of information given by teachers.

Unfortunately, there is little information, at present, on which an effective influence program can be built. Our attitudes towards drugs and even our laws regarding drugs contain much contradiction and confusion. What is needed is some sort of educational program about artificial euphoria—the need to produce euphoria out of effective living rather than out of novel drug experiences. However, the society as a whole is not agreed on this, as alcohol and tranquilizers are often used to create artificial euphorias. As long as they are so used, it will be difficult to convince all young people that they should not smoke marihuana or use other sorts of drugs.

To many adults, the use of marihuana and the use of alcohol are considered to be distinctly separate types of phenomena, the first deviant and completely unacceptable and the second normal and socially acceptable—even desirable. But some students do not feel this way, and an educational program based entirely on this rationale will not be beneficial to them. Students often feel that patterns of alcohol and marihuana use have basic similarities. It is important, then, to emphasize to students that *neither* pattern is completely normal or essential, and *not* that one is normal and the other abnormal.

Attention must also be given to parents in an educational approach to drugs. In the discussion sessions some students said they felt that they could not discuss drugs at home. Their parents became disgusted at the mention of marihuana and other drugs, and they typically adopted an attitude that they did not want to hear about such things. Another student complaint was that when they mentioned drugs at home, their parents became suspicious and began "firing" questions: "Have

you tried it?" followed by "Are you sure?" Many parents feel unable to answer questions about "grass," "speed," or "mary jane"; to some the words do not mean anything. Material should be made available to parents through libraries or through parent-teacher associations. If parents are unwilling or unable to adopt a "Let's discuss it" approach to drugs, then the *student* must turn to other sources, often less concerned with his well-being for his information on drugs.

Despite the publicity given to arrests for drug offenses, students' knowledge of the laws governing drug possession and sale is vague.

Some students are not sufficiently aware of the legal risks taken for playful or recreational drug use. In many areas drug users are expelled or suspended from schools. There are indications that forcing drug users out of school is an ineffective approach to this kind of deviance. In fact, it may make their deviance far worse and increase their drug taking. These are the individuals most in need of information and counselling and are much less likely to get it outside of school. It seems to me that by defining high school drug users as bad, immoral, dirty, lazy or ineffectual hippies is very likely to initiate this process by which they just drop out of school, then out of society, form their own (hippie) groups, attack the larger society, be set upon by the larger society (as in hippie subcultures), then become more deviant. It is just this circular process whereby deviants are made more deviant and more alienated by definitions of deviance. Somehow, high schools and parents have to create a place for drug users, a place where they can be understood and encouraged to change, rather than arranging that they become more and more alienated. We can help to create this place by talking to drug users and understanding their problems and potentialities—not by rejecting them as beyond the pale of respectability and giving up on them.

DRUGS AND AMERICA'S DESTINY: Trends and Predictions

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Any estimate of the future must rest on at least three factors. One is our ability to be good historians, identifying what has happened in the past and extrapolating those features which seem to be constant or reemerging as we look toward tomorrow. Another foundation for our estimate must be our objective assessment of the present, being wise enough to see what is really happening around us and interpreting what we see well enough to be able to distinguish trends from fads, intentions from rhetoric, experience from illusion, and short term from long term effects of one or another invention or innovation. A third component in the forecast, assuming we have been good historians and accurate social scientists or social commentators, is that there be a sense of destiny. I refer simply to the existence of goals indicating what the future should be; goals which are strong enough to be self-fulfilling, conceptions so compelling that people set out successfully to create that which they think ought to come to pass. That kind of destiny requires realistic judgment as to what can occur. It requires forecasting in terms of what alternatives may otherwise come to pass, and it requires a combination of luck and intelligence which enables a collection of people comprising a society to act willfully and cleverly to shape themselves and their environment. In that respect, as Heraclitis said, character is destiny.

As we turn to look at the future of people using drugs in our society and ask what the outcomes are likely to be, let us survey—and one must be brief about it—the history of drug use, current patterns of such use, and the several competing destinies which we can identify as accompanying or awaiting us five or 10 years hence. Historically and cross-culturally several facts* are preponderant. Almost every society known to man has used psychoactive substances. In our cross-cultural studies we have identified only four non-literate groups who appear not to use any psychoactive materials. I am, by the way, being conventional in my definition of psychoactive drugs, referring to substances which act on the central nervous system to alter moods, emotions or biological cycles and which may have the capability for altering sensory or thinking processes as well.

History of Drug Use

With regard to the near-universal use of psychoactives, there have been—and still are—three major kinds of application: the most prevalent has been social, that is people take drugs so as better to enjoy one another's company. Secondly, people use drugs in trying to heal disease or alleviate pain. Thirdly, and least common among the ordinary applications, psychoactive drugs are used in religious ceremonials, either symbolically as in the Catholic mass, or ecstatically to achieve mystical experiences. These three major uses are not exclusive; for example, if you look at peyote cult practices among the Navajo as Aberle has done, one sees the social, healing, and religious are combined. This by the way—and here tangential—is another principle of drug use—the more people are involved in drug use, the more purposes they see served by that use. Conversely, the greater the level and variety of functions which psychoactive substances can serve, the greater the chance that

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*The factual references are, unless otherwise noted, to our own research studies. To avoid giving my crystal ball the presumption of authority, I have adopted an essay style without citations.

people will focus on obtaining and using those substances.

Another historical observation is that once a drug has been introduced there is a likelihood, if its use is social rather than religious or medical, that there will be widespread emotional reactions for and against that new substance and what its use is taken to signify. These reactions tend to moderate over spans of 10 to 100 years so that eventually a new social drug becomes integrated into routines. Both pro-drug romanticism and punitive opposition fade. That integration need not be stable, for if societies are themselves undergoing rapid change, if they are under the impact of political, social, or technical forces which tend to break up community controls or the homogeneity of values, then conflicts over the use of psychoactive drugs can reemerge. The concept of "abuse" is likely to apply on such occasions: that is, either when a new—and most often powerful—drug is first introduced into a society undergoing social changes of a disordering kind or when new ways of using an already known drug begin to appear. The most common case is when drug use begins to be secularized; that is, previously controlled and/or ritualized uses, as in healing or religion, become less important in favor of less controlled social uses or—and this is more extreme—uncontrolled private use takes place. That "private" use, by the way, seems to be the end of the line in the evolution of drug practices. It is associated either with self-medication, for example someone taking amphetamines without prescription because he is depressed, or with drug dependency, typically a physical or psychological inability to function or be comfortable without regular drug taking.

Widespread drug use is not in itself a bad thing, if by bad we mean that there is visible damage to health, sanity, or public safety. The evidence from past and present, easily inferred from the fact that humans seem to have a natural affinity for psychoactive chemicals, is that most people use most drugs safely, certain qualifying conditions being met. Those qualifying conditions range from requirements for concurrent adequate nutrition and physical health through the absence of those individual psychopathological features which seem to increase the risk of dependency and including the presence of adequate maturity, self control and, more generally, what is termed mental health. In addition, safe drug use presumes such things as the absence of great emotionality or romanticism which focuses on drugs but for which drugs are but a screen or symptom for some other set of problems. Safety also presumes the absence of those social conditions which are statistically associated with high risk of trouble from drug use. For example, poor urban minority males between 15 and 30 are, in the United States, at high risk of early heroin addiction and later alcoholism. As a parallel, these same males seem at high risk for marihuana stupor or psychosis in north and west Africa.

The foregoing by no means exclude the variables of drug potency, frequency of use, manner of use, and so forth. There are other variables; for example, biochemical idiosyncrasies which, I suspect, may be genetic. You can, if you are so inclined, rear rats with differing liabilities for morphine addiction. Why not people too? Cultural habits also play a role; for example, French children who are given wine but not water to drink because their parents think the water is unsafe can grow up to be alcoholics. No psychological problems need be assumed.

The definition of "badness" or to use the current equivalent, "abuse," depends on political and moral judgments as well as ones resting on health or dangerous behavior. "Abuse" may simply signify that one person disapproves of another's choice of drugs, companions, or life style. Straight people may denounce hippies' use of pot; hippies denounce straight people's use of alcohol. Both are drug users and many in both camps are probably using drugs without ill effects. We have to be careful not to be drawn into an exchange of insults or to allow either side to use science as a masquerade for their particular beliefs.

Current Trends and Patterns

Let us survey the present before putting on our Nostradamus hats to hail future portents. Where are we now in the U.S.A. as far as trends and patterns of use are concerned?

1. Over the last 10 years we have seen an immense increase in the use of mild sedative-euphoric drugs. Consider the development and prescription of millions of tablets of tranquilizers each year. Consider the social use of marihuana concentrated in the 14 to 30 age group.

2. Over the last 10 years we have also seen a massive increase in the use of stronger sedatives and soporifics. Consider too the remarkable, though epidemiologically not well counted, popu-

larity of barbiturates among junior and senior high school students. Dramatic too is the recent spurt in use of opiates, especially heroin, among the 12 to 18 age group and among a small portion of college age people as well.

3. There has also been an increase of hallucinogen use. We can find public schools now where nearly half of the adolescents have tried LSD and where perhaps a fifth use it with some regularity.

4. We also find a very great use of the amphetamines, primarily in medical practice, whereas the social or private use of these stimulants appears to be more limited.

5. We also see the continued development of new substances or new combinations of known compounds by pharmaceutical companies, by illicit labs, and on-the-stree. pharmacologists. Their laboratories differ, but they are all brothers of a sort, dedicated to finding new chemicals which will provide new mental experiences or will, at least, satisfactorily exclude ordinary mental experience.

6. Simultaneously with the growth in the development and use of a variety of chemicals, one sees the rapid escalation of public anxiety, proposals for new laws, and the polarization of conflicts between old fashioned drug users versus the students with their interest in marihuana and hallucinogens.

What inferences can be drawn from the foregoing trends if one accepts them as fairly accurate estimates of what is happening? Let us look at the element of choice which can be inferred.

What is most striking is that the major growth has been in the use of drugs which tend mostly to quiet people down. Simultaneously we may infer a willingness to reduce the legitimate production and prescription of stimulants.

If one allows this crude inference scheme, one will come to the first functional prediction for the future. It is that Americans are seeking via drugs to become more quiescent. They are seeking to employ drugs to reduce the amount of energy invested in activities. Necessarily that means that at least periodically both the younger and the older generation are striving for reduced stimulation, reduced sensitivity to the social scene, reduced demands for high performance interpersonally and, of course, reduced competitiveness, aggressivity and associated impulse release. The big question is whether the quieting effect which is sought is simply periodic, a series of respites between active bouts with a demanding, complex, high performance culture, or whether the reaction is so pervasive that, as a public, we are seeking chronic tranquility. This question is fundamental for our future as individuals and as a society.

My second general inference is that the patterns of use have not changed in any qualitative way over the last six thousand years. We are still using drugs mostly for social and healing purposes. Taking this as a signpost to the future, we can predict that drugs will continue to be used to grease ths skids of sociability, whether among elders using alcohol or relaxing enough via tranquilizers to keep from getting too uptight as they prepare for parties or go out for golf, or among the younger folk, lighting up a joint to listen to music or taking acid in a hippie frolic.

And for the rest of us, as our own habits testify, we seem to enjoy each other the better if our minds are a bit fuddled, our tensions dimmed, and a bit of chemical euphoria sprinkled about to get things glowing a bit. Insofar as we do, in this or any society, produce people who are socially or psychologically disabled, we can expect the particular phenomenon of psychopathological drug use to grow, for drugs today seem to be the final common pathway through which a variety of pains and inadequacies are expressed.

Out of this a prediction emerges. It is that there will be an increasing number of marginal, deviant, or otherwise fouled-up people whose drug use is one of the most visible aspects of their troubles. Ordinary folk, responding to the obvious rather than the subtle, will continue to blame drugs for troubles which may indeed be drug-related but which have their basis—and their cause, if you will—in earlier experiences and more important social problems. This prediction is pessimistic and assumes that society insists upon its outcasts—Erikson's study of the Puritans is an illustration—and will also continue to orient itself toward them by opposition and conflict rather than understanding and accommodation. Lest that sound too do-goodish, let me assure you of my conviction that the outcast himself, as we see him growing up today without a sense of or capacity for community concern will be even more conflict-oriented. As is usual when groups pit themselves against each other, each advocating its own style of life as superior, there will be the noblest justifications with enterprising ideologists writing tracts

rationalizing the ugliness with which both sides view and handle one another.

Projected Outcomes of Future Drug Use

As part of these major predictions, there are a number of possible outcomes.

If we accept the possibility of a quieter, less aggressive, more privately preoccupied general public with a corresponding larger number of addicts—and we already now have probably 8,000,000 drug-dependent people (including, of course, our 7,000,000 alcoholics) we may foresee two political outcomes.

One is the happy outcome. It anticipates that in the drugs now used and now being developed there does exist a proper antidote to the horrendous pressure and bustle of our stimulating, competitive, crowded, technological society. It assumes that drugs will do for us what social and scientific planning did not; namely, to enable us to survive with the unexpected by-products of invention and industry. Given the happy assumption of drugs as antidotes, we would as a society simply adjust ourselves to lesser productivity and reduced action—a goal many ecologists say we must aim for anyway. We would accept our large addict population as a by-product which is unfortunate but nevertheless tolerable. We would admit that there is no technical gain without casualties. That is a rule of nature which pharmacologists have long suspected and the ecologists emphasize. It is an elaborated form of the "no action without reaction" rule of mechanical physics. We would endure our future casualties just as we already endure our over a million auto injuries each year, our over 50,000 auto deaths (over half attributable to alcoholics), and our high rate of homicide and assault involving aggressive people drinking and fighting. There is nothing new to a society accepting its casualties as the price for what most call the good life; if we deny that we are kidding ourselves.

Let us make a different forecast. Assume that most Americans continue to use drugs as they do now, safely and with discretion. Assume that we are not tranquilized out of all competitiveness and that our natural feistiness as carnivores first and humans second is not dissolved chemically. Assume we still enjoy alert sociability as social animals first and private ones only under duress. Assume that education as a formal process continues in this land and that concern with child health and adult maturity expresses itself in constructive parental, community and professional programs. Assume we use our quieting drugs only periodically, not chronically thus achieving variability not constancy of stimuli input. We would then see the same trend for the new drugs as now characterizes the old—intelligent and mature people abandoning cigarettes, and drinking for pleasure but not to excess. Presume the marihuana law is relaxed so that it requires only discretion or moderation to avoid punishment, but does not allow potent forms of cannabis such as hashish or tetrahydrocannabinol to be easily available. All of this constitutes the prediction for the middle way. It argues that humans generally, and Americans particularly, still have the sense and strength to survive even as the world becomes more difficult. We would still see drug abuse—however defined—among an important sector of our population. These groups would include the psychologically troubled, the deprived and disordered poor, the very young whose exposure and acceptance of drugs illicitly offered comes before their strength to resist peer pressure or their knowledge of ill effects, the unstructured children from overly-permissive homes whose parents could not set limits or invoke authority and, as a fifth group, the children whose parents were oppressively strict without consistency or affection where rebellion takes the form of drug use and, because of the subverted feelings involved, drugs become enslaving symbols of unfelt freedom. . . . This population at risk will be large but still a minority. We would have to make provisions at first for emergency care and, as we grow wiser, for prevention.

If we quadruple the number of drug outcasts in the next decade without increasing a dozenfold the number of concerned people willing to work with and for them, we cannot expect adequate protection for the drug-disabled. The best we can do is more of what we do now—custodial institutions which are too big, too ineffective and too cruel. If outcasts increase, and given our present state of mind as judged by what we do, not what we claim, we must expect short shrift for the upcoming numbers of the aimless, deprived, and troubled people who will be, come age 16, 20, 30, or 40, the new class of pariahs.

Determinants of Society's Destiny

It is my belief that an unfolding purposefulness, a growing toward an ideal, a creative commitment, will determine which among the predictions for

America's drug using future will prevail. That future is the destiny of the young, for after all patterns of drug use are better established over 30, and least predictable among those under 18. So it is that the critical personal variables are among the young. What direction young people choose, what states of mind they elect, what emphasis they put on drugs and for what functions—these are the individual actions which, taken en masse, create a destiny for a society.

Note that the word "choices" reflects a hopeful point of view, perhaps not an accurate one. It is part of the myth of rationality to assume that people choose what they shall do. It is the Western optimism still shining. One prefers to adhere to that responsible doctrine in the face of other evidence; the evidence of accident, determinism, the overpowering wave of events. Insofar as we do not choose and cannot choose, insofar as we but delude ourselves with the flattery of choices—as the falling rock is said to make itself responsible by willing itself to fall—then our destiny is already established and the prediction for America's future—drugs or otherwise—more readily made. For myself I prefer that uncertainty which assumes normal individuals do have a range of options from which consciously to select. I prefer the uncertainty associated with the idea of a society made up of people working to determine their tomorrow by gathering and evaluating facts and by coming to decisions, the process of a destiny in the making. If there is no such process, if we are tied to the wheel of life, mechanistic determinism, or in its silliest form simple slavishness to fad and peer pressures, then we are already passive and it is no surprise that we should, through drugs, become much more so to our growing disadvantage. On the other hand, if there is a freedom which individuals can exercise and if there is a responsibility based on awareness of what affects us and how we affect others, then there is much hope indeed.

It can be a very bad tomorrow; the evidence is already in which shows that people rarely attend to disaster warnings until it is too late We know, too, that crowding, chemicals, and chaos do not bring out the best in man or beast. On the other hand, it can be a fine tomorrow too; not one where people live happily ever after for such tomorrows are the dreams of romantics—and if anything dead it is romanticism in the drug movement. Which tomorrow it shall be rests with us all, our character and disposition, for that is our destiny.

II. DRUG ABUSE: DEFINITION AND DELINEATION

WHAT ARE "DRUGS?": A Search For Reasoned Consensus

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By both social custom and law, society defines what we mean by "drugs" and differentiates these from "chemicals," which are called toxins, poisons, and even beverages. In times with slow rates of social change, we find rather general agreement throughout a society on what is to be called a drug, the nature of the drug abuse problem, and what society should do about it. But the period of time in which we now live is seeing very rapid social change, so that many elements of society are out of touch with each other if not in sharp conflict. The phrase, "bring us together," is popular now and for good reason. We need more consensus—reasoned, deliberate consensus—than we now have in the drug area. And if this is not possible, at least a small amount of tolerance for the foibles of our fellowman will go a long way to getting us started in the right direction.

At this point you may feel that you are being served up a dish of platitudes when you expected to dine on something more substantial. I assure you that these are not platitudes, but recommendations for careful analysis of the problem before deciding on what the problem really is. This is the attitude in which I hope we may look at the problem of drugs and society.

Extent of Drug Use

Probably the first question that arises is the extent of use of drugs—how widespread is the use of stimulants, depressants, hallucinogens, and narcotics? Our difficulty here is that we have an enormous number of studies, all providing proximate answers to this question, but for different groups of people, in different regions of the country, using different methods of study and survey, and done at different times.

Several tentative conclusions may be drawn from these drug use studies. Experimentation with marihuana appears to be greatest and the narcotics lowest with other drugs coming in between. Males tend to experiment more than females; and better educated and higher class members tend to "try out" drugs more frequently than persons who are less educated and from lower classes.

How did the problem balloon in size to its current proportions? Two obvious reasons are greater availability of drugs and increased association of young people with drug users. Or putting both of these points together, drugs were simply easier to obtain.

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Precipitating Social Factors

At the more general level of social change, we find a more drawn-out period of adolescence, in which young people simply need more time and many more diversified experiences to achieve a healthy, integrated personality. As our society becomes more interrelated by communication, transportation, and mobility, young people need more time for trial-and-error experimentation and exploration to avoid the conformity and drabness they fear. Greater social, educational, and intellectual pressures are placed on young people than ever before. With or without realizing it, they as well as we must perform, produce, and achieve in the context of larger and larger institutions. Over the years an economy of abundance has developed, but the ethic of hard work continues to dominate our ideals, if not our motivations.

If we add to all of these conditions the discontent with the direction our country is taking—adopting policies which have not been able to keep pace with the rising expectations of minority groups, the periodic thrusts of the civil rights movements, and lastly, the outstanding achievements in technology with the comparative neglect of needed social reforms—all of these provide for disenchantment with and alienation from our sociopolitical system. The point to be made here is that drugs—and a greater inclination to try them, either once or twice or sporadically—conveniently fit into these social changes by allowing us to manipulate moods; by representing a feeling toward society, whether a protest or a challenge to society to find something better; and the most important reason of all, by simply providing fun for the user.

The individuals who fit this picture are certainly not the hardline addicts using heroin, morphine, paregoric, or barbiturates. Our discussion is centered on broad trends rather than a small percentage of pathological individuals. The broad trends are more adequately described in terms of drug use and abuse rather than drug dependence or addiction. Far fewer persons are actually dependent on drugs than abuse them, especially if a legal definition of abuse, with all of its limitations, is adopted.

Aspects of Drug Abuse

Agreement appears to exist on the presence of three major elements in the drug abuse problem: the drugs, people who use them, and social forces shaping and, in turn, being influenced by both of these. Our primary concern here, the drugs, may be classified into three types, based on the source of the compound, the circumstances in which it is taken, and the intended and unintended effects.

The first type of drug problem arises from the unintended side effects of *medically prescribed drugs and over-the-counter preparations.* Most of the "magic" aura comes from their use by medical and paramedical professions to alleviate mankind's ills. There are, however, adverse reactions to medically or self prescribed compounds which are harmful and costly to the individual and society. These attract less attention than the other types of problems probably because there is more social acceptance of the original need—the treatment of ills and maladies—leading to the administration or consumption of the preparation. As a corollary, management of the more powerful analgesics and sleep inducers exposes several professional groups, such as physicians and nurses, to increased risks of abuse.

The second category of problem is the broad and vague area called abuse, dependence, or addiction. It is loosely defined by the means by which a person acquires the drug, the use intended by the individual, and physical effects. Illicit purchase from a dealer for supplies to maintain a habit is the prototype of the abuse pattern, however limited, it is as an example. By definition, drugs used in this manner are not socially sanctioned but carried out by individual choice rather than on the basis of a recommendation by a professional. And, more important, the effects sought are the high, an intoxication to alter the reality of the external and internal world. Research has not delineated the origins of personality dynamics for abuse, and there is a serious question about whether predispositions or early personality signs of drug abuse proneness exist at all. Street drugs which are not diverted from legitimate channels of pharmaceutical production and distribution very often contain additives, contaminants, or toxic materials of immediate concern. "If a sizeable amount of DMT powder does not get you, a little strychnine thrown in may do the job." The sad part of this is that some users may interpret a harrowing experience which is psychologically disruptive as simply a "wild trip." If one is looking for reasons why people should stay away from these drugs, the lack of information about

content and effects of possible contaminants are two very good reasons.

The third category of drug effects that are of interest may be termed the recreational use of drugs, or drugs for which no prohibition or social sanction exists against their use. They are, from the standpoint of law, neutral even though restrictions on their distribution may somewhat decrease their abuse. Alcohol, tobacco, caffein, and cola are examples of recreational drugs, and some contend that marihuana is more of a recreational drug than a drug of abuse, although the evidence for this is scanty. Recreational drugs are those which the individual decides may be used for relaxation, fun, and to get away from the stresses and strains of life.

Society's Attitude

The comparison of drugs of abuse with recreational drugs reveals the lack of consistency in society's approach to both classes. A person may be a confirmed alcoholic and be regarded as "sick" in our society. If he habitually uses marihuana, i.e., is dependent on it psychologically, he will be viewed as a criminal, not a sick person even if the social liability of both persons is much the same. The attitude of many people is that we do not need either one in society, but we already have six million alcoholics so why create a comparable class of potheads? And so the arguments go on. It is well to remember that what is called a recreational drug here has not only a legal but also an informal social base, the behavior of millions of individuals who happen to prefer a particular drug. And at some point the law will begin to reflect the behavior and attitudes of such people.

While such a scheme as this necessarily oversimplifies a great deal by focusing on drugs, it does characterize the general attitude of many, if not most persons in Western society, that the drugs a doctor prescribes for you are "good" even if serious side effects occur; drugs self-administered in private are thought to be "bad," *per se*, even if some of the consequences are beneficial; and lastly, recreational drugs are not called drugs, because we do not like to admit that directly changing our moods or feelings has some social benefits as well as liabilities.

ALCOHOL: A Model Explanation For Drug Dependence

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Patterns of Dependency

The various consequences of drug use have been quite familiar to medicine in our encounter with alcohol. The connoisseur of wine may be said to have a habit; he misses the presence of his drug which he uses as a part of a ritual. He is, then, "dependent" on alcohol, but in all likelihood not out of control of either the quantity or timing, or the occasion of intake; or of the appropriate behavior during the drug state or that following it. His habit does not impair his social, occupational, or personal competencies which are maintained whether or not the drug is available. Nor does he seek other drugs as a substitute or to self-medicate either his mild withdrawal symptoms or other effects of alcohol.

Now, with the stresses of everyday life, this controlled habitual intake could become increasingly compelled and central to behavior. Whether or not he is "a drunkard," he is at that juncture significantly "drug dependent" and may or may not show psychosocial disruptions. There are persons for whom the daily intake of a dose of alcohol (or marihuana) may be requisite to "feel right" and to accomplish organized activities, just as there are some for whom a nocturnal sedative seems critical to efficient day time functioning. Such a person may, however, require more alcohol—more frequently—and (withdrawal risks aside) some or many segments of his life may begin to suffer.

With or without the existence of a significant daily habit, we know of compulsive flights—"episodic dependency"—with binges of excess drug taking which may occur with severe toxic or social and behavioral consequences. Other drug related tragedies may have nothing to do with drug dependency, but with a single, isolated occasion of excess intake and loss of personal controls. Others constantly use excessive amounts of alcohol, but only episodically show a breakdown in functioning.

For many, alcohol is central for existence and abstinence—if it occurs—is seen only after immense suffering. For these abstinent people, it is important to appreciate the precariousness of their dependency and the lure of returning to their habit. A habit once established is never forgotten, and this sobering fact ought to be kept in mind as a consequence of drug dependency. When possible, the ex-alcoholic wisely avoids other sedative anti-anxiety agents which he tends to use as he used alcohol.

In principle, there is nothing in what we encounter with alcohol that cannot be seen with the newer drugs of abuse.

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CIGARETTES: The Dynamics of Change in Smoking Behavior

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With the publication in 1950 of four individual studies linking smoking to lung cancer, cigarette smoking joined the company of other forms of gratification behavior whose abuse leads to serious problems. In its company are the well-known problems posed by sex behavior, drug use, eating habits, alcohol use, physical risk-taking such as fast driving or hazardous sports, and violence.

In general, one may define this class of behavior as comprising normal, socially acceptable ways of increasing the enjoyment of life, or providing mechanisms for coping with the problems of life. They can be useful, even necessary, concomitants of life. They share the characteristic that when carried beyond a certain point or when they occur at inappropriate times, that is, when they are "abused," they create problems—either health problems or social problems—for the individual, the people around him, or society at large. All of these forms of gratification behavior have characteristics in common and yet each has its own distinguishing features. For example, eating is a necessary form of behavior to maintain life; but when it is overgratified, it can lead to obesity, creating both social and health problems for the individual.

What distinguishes cigarette smoking from the others is that after gaining a stronghold on the American population over a period of some 40 years, research reports have begun to show that what was considered abusive use by most people prior to that time (say three or more packs a day) is a serious overestimate. Abuse of cigarettes must now be defined at a much lower level; in fact, we have not been able to identify any threshold even below a half-pack a day at which serious risks are not encountered.

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Because of the hold cigarette smoking has on the adult population (about one-half of male adults and one-third of female adults are cigarette smokers), and because of the substantial vested interest in the continued use of cigarettes represented by a one-billion dollar agriculture product, a nine-billion dollar industry, and a three-hundred million dollar advertising investment each year, the forces operating against control of this problem are strong. As a consequence, the only practical methods available to bring the situation under control are not those which *impose* change but rather those which *encourage* change by promoting the reduction of smoking and by discouraging the taking up and continuation of smoking.

Research on Smoking Behavior

For about five years we have been engaged in a research program designed to identify how this might be accomplished, and for the last three years we have had the opportunity to combine this research with an operational program to reduce the effects of cigarette smoking in the United States. For many reasons, especially those encompassed by the widespread use and social acceptance of cigarette smoking, it is an easier form of gratification behavior to study than many of the others, particularly since the hazards involved have been so recently identified and are so well documented. In working toward a solution of the problem and in carrying out research designed to identify the dynamics of change in smoking behavior, we have had the opportunity to add to knowledge on how to reduce the death and disability associated with cigarette smoking. In addition, we are trying to arrive at some of the general principles of encouraging behavior change that will reduce the impact of serious problems on the individual and on society.

Out of our study of the problem has come a

basic approach that is summarized in a fairly complex, dynamic model of behavior change. This model was first developed on the problem of cessation of smoking for adult cigarette smokers. However, a comparable model is also being developed around the initiation of smoking behavior. The model has two basic dimensions: one represents the *factors* that determine the cessation or continuation of the behavior and the other identifies the *process* whereby change takes place. This model is given schematically in Figure 1. It is designed to illustrate the problem and the process in that portion of the smoking population which does not actively reject the fact that smoking is a health hazard. This now includes well over 80 percent of the smoking population.

Factors in Smoking Behavior

The cessation of smoking depends on cultural, psychological and social factors. Essentially four elements enter into this behavior:

1. The Reasons for Giving Up Smoking—or Not Giving It Up. Cultural factors play an important role here, because one's values are critical in determining the outcome. How important is health to the individual? How does smoking relate to other goals of the individual that may be achieved or denied if one smokes? So far we have identified and can measure four common factors: health, the exemplar role, the esthetics of smoking, and mastery (or self-control over behavior).

2. The Perception of the Health Threat. We are only too aware of the many gaps in knowledge and misconceptions that exist in the general population of smokers about the nature and magnitude of the biological effects of cigarette smoking. We have shown that, not only must one be aware of the fact that a threat exists, one must recognize its *importance*, see it as *personally relevant*, feel *capable* of stopping and *recognize the value* to be derived therefrom.

3. The Psychological Use to Which Smoking Is Put. We have applied the theoretical model developed by Tomkins (1966) in analyzing the role of the cigarettes in the management of affect. People can be identified as using cigarettes in one or more of the following affect management classes: to increase positive feelings—through stimulation, sensorimotor manipulation, or accentuation of pleasure states; to decrease negative feelings—that is, to help cope with feelings of anxiety, distress, shame, etc.; habit smoking in which the affective component has been lost; and psychological addiction which is an organized pattern of alternating an increase of positive feelings with a decrease of negative feelings. We have been able to develop a measuring scale for six independent factors which, in combination, identify what kind of smoker an individual is.

4. Social factors which facilitate or inhibit either continuing smoking, or continued success as a nonsmoker. Here social forces, interpersonal influences, mass communications, and physicians and other key groups all can play an important part.

Steps in Changing Smoking Behavior

The process whereby change takes place in adult smoking habits starts with a simple awareness that smoking is a health hazard. It then progresses through four stages: (1) to stop ignoring the problem; (2) to initiate the action to stop; (3) to achieve short-term success; and (4) to achieve long-term success. Thus our task with the cigarette-consuming public requires four steps.

First, we have to get people to stop ignoring the problem. As I have said, people are aware of the fact that cigarette smoking is harmful but they do not spend much time thinking about it. They don't get up in the morning and think "Oh, dear, I'm smoking a cigarette. I wonder what effect it's going to have on me. And should I do anything about it?" They just smoke the cigarette and think about something else. In general, people don't stop to think about the problem.

The next step in this process is to get them to initiate the action to stop. This takes an investment of energy. Any kind of change involves energy input and most of us are lazy. It takes a great deal of incentive to undertake a change in what we are going to do to alter the way in which we behave.

Then we must do those things which will maximize the short-term success: to find the ways to help people through the initial period without cigarettes, to find substitute gratifications which will not have serious side effects, and individualize therapy to the individual's problem.

I am distinguishing between short-term success and long-term success because there is every evidence that the factors that go into determining these are very different and that one has to look at them as two separate, although related, problems. Obviously, you cannot have long-term success without having short-term success first.

Finally, the fourth step: we have to maximize the long-term success; we have to prevent recidivism; we have to establish a climate in which the ex-smoker has no desire to return to his former habits; and we have to provide him with appropriate support.

Figure 1 shows these steps in the process across the top and the factors that can affect the process along the side, with regard to perception of the threat. Let me illustrate the type of findings we have by the results of one study that involved reinterviewing, in the summer of 1966, a group of 1500 adult cigarette smokers first interviewed in a national probability sample of adults in the Fall of 1964. The symbols + or ++ mean that being in the upper half of the distribution on that factor increased the likelihood that this step in the process took place in the next 20 months. − or −− means it decreased the likelihood, and 0 means it had little or no effect.

As you can see, three of the four factors in the "perception of the threat" contribute significantly to having people stop ignoring the problem; two factors contribute to the step of trying to stop; two contribute to short-term success; and one actually decreases significantly the likelihood of long-term success.

The ways in which these factors combine are also interesting. The effects of the four factors are more or less additive in getting people to stop ignoring the problem. However, in getting them to move to the next step, one of the factors is sufficient, and having more than one present adds very little. In the case of short-term success, the relationship is still different—all four of the factors must be present to get maximum effect, and there is little effect in the absence of any one. And finally, except for the negative effect of the personal relevance factor, the perception of the threat has little to do with long-term success.

Our present research is attempting to identify all the relationships and interactions that exist between the determinants of change on the one hand and the process of change on the other.

Process of Developing Smoking Behavior

We have also developed the same kind of analysis of the determinants of change and the process of change in the taking up of smoking, although this is still in a more primitive research stage. The determinants fall into the same broad classes, but many of the important factors may be different. The process is the temporal one of progression from:

1. Not smoking at all
2. Experimenting with smoking
3. Occasional smoking—that is, smoking on certain, well identified, fairly infrequent occasions
4. Expansion in frequency and variety of the occasions on which smoking takes place
5. Regular smoking—that is, carrying cigarettes on one's person most of the time

An analysis of the relationships between the determinants and the various steps in the process can provide the clues for developing the most effective intervention procedures.

Facilitating Voluntary Change

It is not our aim to manipulate adults into stopping smoking against their will. I doubt that we could. It is our conviction that a large part of the smoking population is ready for change. To produce this change, we need to get more people to spend some time thinking about the problem and developing some insight into how they really feel about smoking, what they know about it, what they get out of smoking, and how to find a more supportive and congenial world for the giving up of smoking.

	Steps in the Process			
Perception of the Threat (Knowledge)	Stops Ignoring the Threat	Tries to Quit	Short-term Success (3 weeks)	Long term Success (1 year or more)
Importance	+	+	0	
Personal relevance	++	0	0	−
Value of cessation	+	0	+	0
Capability for cessation	0	+	++	

Fig. 1. Schematic analysis of the behavioral problems of smoking cessation in a population of smokers which is aware of the fact that cigarette smoking is hazardous. See page for explanation of symbols.

This approach is completely in accord with ever-increasing demand of the individual to exercise more control over the world in which he lives. The student demands it of the college. Minorities demand it of society. At some point we will have to recognize that this demand for involvement and decision-making is at the root of many of our problems in the delivery of health services.

Answers to questions about what a person knows about the health consequences of smoking go beyond the simple awareness of the threat. Appreciation of the importance of the threat, accepting the personal relevance of the threat, understanding the potential health benefits of stopping smoking, and awareness of one's ability to stop are all common deficiencies in the knowledge of the public. A self-appraisal of these deficiences offers the opportunity for health information communications that are pin-pointed directly toward the gaps that the individual has in his knowledge.

An analysis of what a person gets out of smoking—what kind of a smoker he is—has broad implications for identifying the specific methods that are most likely to be successful in stopping. Tomkins' (1966) original model has been used by us in a number of studies, and the varieties of ways in which people use the cigarette can be reliably measured. Our knowledge of precise therapies that these factors suggest is still very limited, but research offers much hope for expanding our knowledge in these areas.

Finally, an understanding of the degree and types of environmental supports one has to have to give up smoking can play an important part in increasing the chances of long-term success in the person who tries to give up smoking.

By working toward providing a self-appraisal instrument, we hope to get people to think seriously about their smoking long enough that a substantial number will decide to do something about it, and will have developed enough insight so that their chances of success may be appreciably increased.

It is my conviction that every person does have a right to decide for himself whether or not he wishes to smoke, but this is only in the context of understanding fully the possible consequences of his action. The weight of 50 years of "acceptable" smoking habits, with the consequent psychologic and physiologic dependence that is developed, make it very difficult for people to accept a clear understanding of the possible consequences of smoking. How can we bring people to this realization of what it is they are exposing themselves to? With that knowledge, they could make their own decisions.

At the moment, they are not free to make these decisions, for their autonomy has already been invaded by social pressures, and it has been invaded by the world as it existed when the problem was first identified. What we are trying to do is to redress the balance to free people—to allow them to be autonomous and have the opportunity for making a decision in their own self-interest, and on the basis of their understanding of themselves.

We are just at the beginning of our analysis of how to provide help of this kind. Probably what is most encouraging about it is that everything we learn about how to deal with the smoking problem will serve us well in dealing with other problems in the control of gratification behavior.

What is different about cigarette smoking? Obviously, its most distinguishing feature is that after years of thinking that typical or average smoking was not abusive, we discovered that it was, and that it leads to very serious health consequences; and so we are faced with the problem of changing the whole cultural pattern of how people look on cigarette smoking, even very modest smoking.

If we can learn to control cigarette smoking, if we can learn that we can change people's behavior, not by imposing something on them, but by getting them to develop the self-understanding, that will help them reach a point where they can do this for themselves, then I think we can help people grow and develop and, after all, that is probably at least as important as improving their health.

MARIHUANA AND HEALTH

During the year since submission to the Congress of the first annual report on Marihuana and Health our knowledge of this complex issue has been significantly advanced in almost all aspects. We have a far better picture of the extent of present usage in the United States, of the basic nature of the material, and much of the essential basic research on short-term effects in animal and man has been done. Well controlled studies of more extensive human use in a laboratory setting are underway and two overseas studies of long-term, chronic users are nearing completion. Nevertheless even as the extent of the problem has grown so has our awareness of its complexity and of the difficulties of studying it.

In this summary of the second annual report we will attempt to describe the present state of our knowledge, to summarize the progress made in the past year and to again translate the disparate and necessarily technical data into as reasonable an answer as possible to the question: What are the health implications of marihuana use for the American people?

Despite the advances of the past year any simple answer to this disarmingly simple question is not likely to be possible now or in the near future. It is increasingly apparent that any satisfactory answer will have to take into account the many contexts of use, the purposes of use, the age, sex, physical, and psychological characteristics of the user, the material, its dosage and frequency of use, the route of use, etc. Even in assessing the immediate effects of marihuana on mental or physical performance it has become increasingly apparent that effects can vary greatly depending on the complexity of the task, the expectations of the user, the cultural context of use, user motivation, and the stage and level of intoxication of the user.

Summary of the second annual report (1972) on *Marihuana and Health* (DHEW Publication No. (HSM) 72-9115) from the Secretary of Health, Education, and Welfare to the Congress. Annual reports on the health consequences of using marihuana are required by Public Law 91-296.

Extent and Patterns of Use and Abuse in the United States

Much additional data has been gathered with respect to the extent of American marihuana use since last reporting. Nationwide studies of high school and college level youth have reported preliminary findings and there is now data on use in the general population and among employed groups. As use in the United States has increased, increasing sophistication is being shown in assessing such use. Researchers are going considerably beyond the oversimplified question, "Have you every used marihuana?" to inquire into the frequency of use, the level of use and the circumstances surrounding use. We are more confident that data is reported with reasonable consistency although more needs to be done to correlate reported use with actual use.

There is every indication that use has increased and is very widespread. In teenage and young adult groups use is very extensive—in some groups as high as 90% have used marihuana at some time. Even among young people, however, use is by no means evenly distributed in all areas of the country. For example, one national survey reveals that among persons 18–29 years old there are three times the percentage (over a third of the total age group) who "have used" in the West as compared with the other regions of the country sampled.

Among a still younger age group, the 12–17 year olds, a nationwide study has indicated that nearly one in four in the West has used the drug, a slightly lower percentage in the northeast and a bit more than one in ten "have used" in other parts of the country. It is noteworthy in all studies that where the percentage of those who "have ever used" is large, so too is the percentage who make regular use of marihuana.

Based on converging evidence from several recent surveys, we estimate the total number in the United States who have ever used marihuana to be 15 to 20 million. A very recently released National Commission on Marihuana and Drug Abuse survey

has estimated that the total number at present may well exceed 24 million. Exact figures, of course, depend heavily on the date of the survey, the methodology employed and the underlying statistical assumptions which are made. Estimates may thus be expected to vary considerably from survey to survey depending on all these aspects. While many experiment and do not continue, over half are estimated to use the drug one or more times per month. About one in four of those who use that often do so three times a week or more. Since users fall heavily into the teenage, young adult group, we are talking principally about youth. It should be emphasized that even among youth, however, there is considerable variation from school to school. High school rates of having ever used range from as low as five percent to as high as 90%.

Last year it was noted that one northern California county that might be a bell-wether of marihuana use more generally, had experienced a leveling off of drug use among high school students during the preceding year. The most recent annual survey of student use in this county now indicates sizable increases, especially in marihuana use, at all grade levels. About half "had used" at some time in the year. On the senior high level at the time of the survey (late spring, 1971) a third to a half of those who reported having used marihuana in the preceding school year had used it fifty or more times during the year. Even among junior high students in this high-use county, a third to a half of the users had done so ten or more times (from 13–29% had used at some point in the year).

Among college students 31 percent had reported having used marihuana by 1970. During 1971 this figure increased to 44 percent of the total college group. Even among four medical schools surveyed from one in six to seven out of ten students had tried marihuana with as many as nearly half in one school currently using.

Several studies suggest, not unexpectedly, that the more psychologically disturbed or socially unstable are more likely to make regular, heavy use of marihuana. School drop outs are more likely to be using marihuana as are those from disturbed families.

While the amount of data on minority group use is small, at least one study of Mexican-American youth in California suggests that among that group use was no higher than among high school youth in California generally.

Much remains to be learned about the relationship of drug use to vocational adjustment and job performance. One study conducted in New York State showed wide variation in the percentage of those in various occupations who had made use of marihuana one or more times per month. The range was from one in seven sales workers who had used to no reported use among the farmers sampled. Among regular users who actually used marihuana on the job, nearly half of those who had used and were employed in sales had smoked at work. About a fifth of those users in professional and managerial occupations had done so, but only 3% of those users employed in service and protective work had ever made use of marihuana in the work situation. There is no evidence in this study bearing on the issue of work effectiveness or industrial safety as related to drug use.

While heavier marihuana use is clearly associated with the use of other drugs as well—those who use it regularly are far more likely than nonusers to have experimented with other illicit drugs—there is no evidence that the drug itself "causes" such use. More frequent users are likely to find drug use appealing or to spend time with others who do so or in settings where other drugs are readily available. Marihuana use does not appear to have a causal role in the commission of crimes.

Marihuana Use In Other Countries

Cannabis sativa, the plant from which all varieties of cannabis from marihuana to hashish are derived, grows and is used throughout much of the world. While use in the English-speaking countries and in Europe is typically recreational, much if not most of past and present use elsewhere has been as a work adjunct, to relieve fatigue, as a form of self medication, as part of folk medicine and in association with religious practices.

Almost all of the countries of Europe and North America have had a marked upsurge of interest in marihuana use—primarily among young people. Clear statistical evidence for this is frequently lacking but the surveys that have been done, the increasing amounts of confiscated material and the observations of those closely associated with youth, all appear to support this conclusion. Even countries, where use is endemic but where it has in the past been limited to certain segments of the population, have had a recent diffusion to university students and other previously non-using youth.

Generally our information about patterns of use

abroad ranges from the results of carefully conducted surveys in a very few countries to a largely impressionistic picture. In only a few countries is it based on the observations of trained anthropologists. Much needs to be learned about use in other cultures and particularly about some of the social factors that serve to control its use. For example, in the one country in which use and sale is quite legal (Nepal), use of cannabis—especially its indiscriminate use—is apparently controlled by the conservative nature of the society and by parental and community disapproval. Even in this society in which indigenous use is well controlled, there has been growing concern over the influx of young foreigners intent on more indiscriminate use.

In most countries in which cannabis use has had a long history it is at least nominally illegal; typically use is associated with the lowest classes and social opprobrium is frequently attached to use. In other countries in which cannabis has only recently been introduced, the official stance has varied from relatively permissive to highly punitive. The lack of adequate data coupled with the cultural diversity of the countries involved precludes any attempt to evaluate the general effectiveness of the various approaches to cannabis control cross-culturally.

The Material And Analytic Methodology

Again it should be emphasized that what is termed marihuana varies greatly in potency from place to place and from time to time even in the same area. That which is sold in the United States is extremely variable ranging from psychoactively inert at the one extreme to hallucinogenic in large doses at the other. The type of marihuana generally available in the United States tends to be considerably less potent than that found in some South American countries and in other parts of the world. Adulteration, while reasonably common, is not usually done with more dangerous materials.

In the past year there has been a greater tendency for lay as well as scientific discussions to take into account such essential factors as potency, frequency of use and quantity in discussing marihuana effects. Nevertheless it should again be emphasized that awareness of these aspects as well as of user characteristics is basic to any thoughtful discussion of the drug and its implications.

While considerable progress has been made in the analysis and understanding of cannabis constituents, most of this is of primary interest to the technically trained. A great deal of work is being done in order to develop adequate methods for measuring the amount of cannabis constituents or their metabolites in human body fluids. Thus far a simple test analogous to the blood alcohol determination for marihuana intoxication has eluded us. Encouraging progress is being made, however, and it is hoped that such techniques will be forthcoming in the near future.

Preclinical Research In Animals

Animal research, generally supported by limited clinical observation in humans, has clearly established that the margin of safety with cannabis and its synthetic psychoactive ingredient THC (delta-9-tetrahydrocannabinol) is very high. This work on the toxicology of the substances has laid the groundwork for the systematic study of more extended periods of carefully controlled administration in humans.

Work in animals has also shown that cannabis and its original constituents are rapidly transformed in the body into metabolites which are persistently present for several days. The implications of this persistence are unclear although it is possible that these metabolites may effect the later use of further amounts of cannabis or interact with other drugs taken in presently unknown ways. It may also be that it is the metabolites rather than the original drug constituents which are responsible for the drug's effects. Improved knowledge of the chemistry of these bio-transformation products may provide the key to a relatively simple test of the fact and level of marihuana intoxication. Persistence of these products may also permit detection of previous intoxication days after the initial event.

Studies of the distribution of the drug, radioactively labelled, have shown that its metabolites tend to concentrate in areas of the brain related to those functions effected by the drug. Despite this gross correspondence of drug concentration to brain function, much still remains to be learned about the specific mode of action of marihuana.

Tolerance

The issue of tolerance to cannabis has been an object of considerable discussion. By tolerance is meant a need which develops over a time, as a result of repeated use, for increasing quantities of a drug to produce a similar effect. Users have frequently reported that those who are experienced require smaller amounts of cannabis to achieve the same effect than do novices. This so-called

"reverse tolerance" is an effect unlike that of most other drugs. Whether or not this reverse tolerance is based on metabolic and distribution changes after repeated use or it is the result of a learning process has not yet been determined.

Reports from countries where use is traditional suggest a level of use that would be highly unpleasant for the inexperienced user. This suggests that tolerance, at least for the effects which are perceived subjectively as unpleasant does develop. Whatever the subjective impressions of drug effects, it seems clear that experienced marihuana users can also tolerate larger doses in the sense that disruption of their performance on various intellectual, perceptual and psychomotor tasks is less than for the inexperienced.

In animals, for the most part, the evidence is clear that tolerance to certain effects of cannabis develops. It has been found in most species tested and is large. It is noteworthy, however, that in animals as well as humans tolerance may develop for some aspects of the drug's effects but not for others. Whatever the ultimate resolution of the tolerance question, it appears unlikely that in man a degree of tolerance comparable to that for opiates will be found.

Effects In Man

Research of the past year has underscored the necessity of taking into account multiple aspects of the individual and the drug taking situation in evaluating marihuana's effects. These include such varied aspects as the characteristics of the material itself, the dose and route of administration, the individual's metabolic rate, his prior experience with the drug, his set (personal expectations) and the setting in which the drug is used.

While there is little doubt that the major psychoactive ingredient marihuana is delta-9-THC, there is still considerable uncertainty regarding the biological activity of the many other marihuana constituents. Of the two usual ways in which marihuana is consumed by man, smoking is by far the most common in the United States. As compared to eating the material, smoking results in considerably more rapid absorption with the onset of effects typically occuring within a few minutes. The quantity required for a given effect is significantly smaller when smoked and since the onset is rapid, the user can more readily control the drug's effects than if the drug is eaten. By contrast, when consumed orally it may require from a half to over two hours to feel the drug's effects which tend to peak later and to persist longer. In experimental studies with humans, it has become increasingly apparent that in the use of the synthetic THC the choice of the substance in which to administer the material orally makes a substantial difference in how rapidly and completely the THC itself is absorbed.

Experienced users appear to metabolize the drug more rapidly than do less experienced although the exact significance of this is unclear. It may partially explain the greater sensitivity or "reverse tolerance" that users have reported. Much remains to be done to clarify some of the implications of cannabis metabolism in man.

By now the acute effects of marihuana have been generally well elucidated. Subjective effects are highly variable partly depending on the user's expectations and the setting in which he consumes the drug. Experienced users report such subjective effects as: an awareness of subtlety of meaning in sight and sound and an increased vividness of such experiences. Frequently users report enhanced sensations of touch, taste and smell. Alteration of time perspective with an apparent slowing down of the time sense is almost universally reported. A sense of enhanced social awareness is often reported with low dosages, but at higher levels this is apparently diminished and there may be social withdrawal. Although emotional reactions reported by regular users are usually pleasant, one in five experienced users in one study reported having at times experienced temporarily overwhelming negative feelings.

Several studies have underscored the critical role of attitude and expectation in determining effects at least at low to moderate dosage levels. Such expectations can result in the individual having subjective reactions to an inactive material that are similar or identical to the active drug.

The two most consistent physiological effects of marihuana continue to be an increase in pulse rate and a characteristic reddening of the eyes. The latter occurs even with oral dosages indicating that it is not primarily the result of smoke irritation. Recently, it has been found that marihuana use decreases intraocular pressure, a finding that may have therapeutic implications in glaucoma patients.

Although marihuana users frequently report substantially increased hunger at the time of use, there is no evidence that marihuana lowers blood

sugar. It may be that the effects on appetite are an indirect result of an enhancement of the subjective sense of taste leading in some to increased food consumption.

Neurological correlates of marihuana use seem minimal although it is possible that marihuana-induced drowsiness may obscure small drug-related effects on the electroencephalograph. There is some EEG evidence that tends to objectively confirm the report of users that they have an enhanced ability to ignore outside stimuli while high.

Effects on Intellectual and Psychomotor Performance

More recent findings continue to confirm earlier reported observations that acute marihuana intoxication causes a deterioration in intellectual and psychomotor performance which is heavily dose-related as well as dependent on the complexity of the task. The more complex and demanding the task, the greater is the deterioration in performance. When alcohol and marihuana are consumed together the decrement in performance is greater than when either is used alone. To some degree at least, experienced users seem better able to compensate for part of the effect of marihuana than do inexperienced users.

Marihuana clearly has an acute effect on short term memory which has now been confirmed by many investigators. One explanation for this impairment is that the drug reduces the ability to concentrate while intoxicated, preventing the implicit rehearsal that may be essential to remembering newly acquired information.

Driver Performance

Driver performance has been of considerable research interest and such research is continuing. There is, however, increased reason for believing a motorist's performance is significantly impaired by marihuana intoxication.

Although initial research suggested relatively slight impairment of performance on a driver simulator, more recent work suggests that this may not be the case. An increase in time required for braking has been reported as has a marked increase in glare recovery time which persists for several hours following intoxication. Research on driving tasks more closely resembling actual driving conditions is going on to more accurately specify the degree of impairment likely under varying conditions. It should be noted that the performance of a highly motivated test subject under laboratory conditions may be considerably less impaired than that of a driver functioning under more typical driving conditions. Under usual driving circumstances multiple distractions are common and the driver may be less motivated. The possibility of a spontaneous recurrence of an earlier drug experience (a so-called "flashback"), related to the use of marihuana and other hallucinogens and which interfered with driving, has been raised by some case reports. Evidence for the frequency of such phenomena in this or other contexts is generally lacking.

Acute Physical Toxicity

Death from an overdose of cannabis is apparently extremely rare and difficult to confirm. This is consistent with animal data which indicate the margin of safety with cannabis or its synthetic equivalents is quite high. Nausea, dizziness and a heavy drugged feeling have been reported usually as a result of an inadvertent overdose. There have, however, been a number of cases of acute collapse following an attempt to intravenously inject marihuana or some preparation made from it. It is not clear whether these were the result of an acute overdose of cannabis constituents *per se* or a combination of other factors related to the injection process. In view of the hazards such intravenous use seems especially dangerous. While there has been one case report of epileptic seizures temporally related to marihuana use, there have been other past reports of the efficacy of cannabis as an anti-seizure medication in children. In general, it appears that acute toxic physical reactions to marihuana are relatively rare.

Chronic Physical Effects

Frequent, relatively heavy use of cannabis is still rather uncommon in the United States. Thus, observations on the implications of such use are derived from cultures very different from our own. The marked differences in diet, living standards including level of medical care and in patterns of use make it difficult to apply overseas observations to our own domestic situation. Nevertheless, such observations may provide valuable clues to the possible implications of American use and when combined with the results of other research may be quite valuable.

While respiratory complaints have long been reported as a result of cannabis use, it is not always certain to what degree this is the result of the drug or the tobacco with which it is frequently mixed.

Among an American military sample of heavy hashish smokers complaints of bronchitis, asthma, and nose and throat inflammation were common and reported to improve upon discontinuing the drug. While there have been reports of impaired liver function as well, upon closer examination these seemed to be more closely related to alcohol use than to cannabis use.

Blood circulatory difficulties in the legs have been reported in a North African sample of users as have arterial changes among some young multiple drug users in the United States, but the role of cannabis in these is still unclear.

There has also been a report of slurred speech, staggering gait, hand tremors and difficulties in depth perception in a few adolescent patients, but the exact significance is difficult to evaluate since these patients were also using other drugs.

One of the most serious reports is a recent one based on some very recent British work which, using radiographic techniques, found evidence of cerebral atrophy in ten young cannabis smokers. However, some researchers have questioned whether such techniques can be used to demonstrate cerebral atrophy. Unfortunately the subjects were multiple drug users, with 8 out of 10 admitting to the use of amphetamines, a drug which some reports have implicated in organic brain changes. The comparison group was not altogether appropriate and thus the role of cannabis remains uncertain. Because of the seriousness of the finding, however, this work will be followed up by careful animal research as well as further clinical studies to explore this serious possibility. The authors themselves caution against overinterpretation of their work and emphasize the need for additional research.

Preliminary findings of a study of 31 male chronic hashish users in Greece and of a similarly sized Jamaican sample of intensively studied cannabis users are noteworthy for the relative absence of pathology in these chronic using groups. It should, however, be emphasized that the samples are small and the data are preliminary. Given the small size of the samples, rarer or less obvious consequences of use may be missed. Larger scale epidemiological studies of chronic users are planned to overcome the limitations of smaller pilot efforts.

Genetics and Birth Defects

Among the most serious consequences that might ensue from the use of any drug are persistent changes in the genetic heritage of users or the production of birth anomalies as a result of drug use by parents. The amount of evidence bearing on this question is modest. What work has been done has found little evidence of chromosomal abnormalities in marihuana users as compared to matching nonuser controls. With respect to birth defects that might be the result of maternal cannabis use during pregnancy, there have been several case reports but it is impossible to be certain whether there is a differential rate of such defects between users and nonusers. It is known that in animals THC can cross the placental barrier and enter fetal circulation. Once again it must be emphasized that the potential seriousness of the effect makes the use of marihuana (or other drugs of unknown potential for producing birth defects) unwise. This is especially true for women during their reproductive years.

Cannabis and Psychiatric Illness

Any discussion of the relationship of cannabis use to psychiatric illness must take into account the formidable difficulties of establishing the role of any drug as a causal factor in mental illness. It is typically extremely difficult to separate out the role of the drug from the many other factors that may play a role in the etiology of a specific disorder. In addition, in those countries in which chronic cannabis use is common, epidemiological surveys are virtually nonexistent and adequate diagnostic evaluation is more often the exception than the rule. As a result, the diagnosis of cannabis psychosis may be used as a catchall description for all those with a known history of cannabis use who are also emotionally disturbed. Finally, we are aware that non-drug factors such as the preexisting psychological state of the user and the circumstances surrounding use can be of fundamental importance in determining the user's response to the drug.

Cannabis psychosis has been used as a diagnosis for many years in countries in which cannabis use is traditional. During the nineteenth century it was popularly believed in India that marihuana produced mental illness. The Indian Hemp Commission, upon learning that such a diagnosis was frequently based on the impressions of laymen, did a careful analysis of its own and concluded that drug use was a factor in no more than between seven and thirteen percent of admissions to Indian mental hospitals. In other countries estimates of the percentage of admissions that are

cannabis-related range from 2–3% in South Africa to as high as 17% in Morocco. In most reports it is simply impossible to distinguish between illness resulting primarily from toxic effects of cannabis and an aggravation of a previously existing serious mental disturbance.

Diagnosis is typically most heavily based on a history of drug use although attempts have been made to take into consideration the duration of the illness and its failure to develop into a long lasting schizophrenic picture. Symptoms which have been emphasized in the Eastern literature have included: acute or subacute onset of confusion, visual and auditory hallucinations and paranoid ideation sometimes accompanied by agitation and aggression.

In the 1930's toxic psychoses were reported among some marihuana users who were described as recovering in a few days. During the experimental phase of the investigation conducted by the La Guardia Commission, psychotic episodes were reported by one in nine of the 77 subjects studied. Beginning in the late 1960's there has been a spate of reports of adverse psychological consequences of use in the United States. Unfortunately, few of these provide any indication of how frequently such reactions occur in a large population of users. A wide range of symptoms have been reported, most more nearly resembling a panic state than full-blown mental illness. There is, however, little question that given a sufficiently high dose, hallucinations and delusions can occur. While such adverse psychological reactions are more common with the inexperienced and when inadvertently high doses are ingested, they occasionally occur even with low doses. Reports typically are of individuals who have sought treatment for their difficulties and it is usually difficult to be sure how much of the pathology displayed is the result of previously existing personality problems rather than "caused" by marihuana use. There is some evidence that when a sample of frequent marihuana users is matched with their non-using friends, the amount of psychiatric symptomatology found in both groups is greater than in youth generally. This suggests that heavy marihuana users may be drawn from a population with an above average amount of pre-existing psychopathology. Thus, use, especially in association with other drugs, may more typically aggravate already existing psychiatric problems rather than in itself causing such illness.

There have been a number of reports on adverse psychiatric reactions to marihuana use in Vietnam among American troops. Onset was usually acute and again, the reports suggest that pre-existing pathology is an important non-drug factor. Almost certainly many of those most attracted to drug use are individuals who have personality problems. In some cases the drug is sought with a conscious hope that it will be psychotherapeutic.

While marihuana use has been widely described in the Eastern literature and to some extent more recently in the West as resulting in a loss of motivation, the question of its role in the process is still unresolved. Many of those most attracted to its use are "amotivated" by conventional standards. The time and effort required to obtain drug supplies and use them may also further erode the expression of more conventional motivation. There is also the definite possibility that the drug and the personality of the user interact in such a way to further intensify the loss of conventional motivation.

Therapeutic Uses Of Cannabis

While use of cannabis is not a medically accepted mode of treatment for any illness in the United States today, the drug has had an ancient tradition of medical use. Even today in much of the world where Western medical practice has made only modest inroads, cannabis retains an important role in self-medication and in folk or native medicine. The range of diseases and other medical conditions for which it has been and continues to be used is very long. For much of the nineteenth century and well into the twentieth, cannabis was a recognized part of the physician's armamentarium against illness although its lack of water solubility and its variable potency were problems. Gradually it was supplanted in Western medicine by drugs that were more consistent in their effects or more conveniently used. Since most of the early reports of use were clinical case reports rather than drug tests conducted under carefully controlled conditions, the relevance of this older literature to potential modern use is questionable.

During the early 1940's the development of "Synhexyl," a chemically related drug to marihuana, generated some interest in medical uses. Some attempts were made to use it in the treatment of depression, the treatment of alcoholism and in preventing epileptic seizures. Results of these limited studies were reported to be generally favorable. Some later research demon-

strated that cannabis preparations had an antibacterial action in the treatment of dermatological conditions as well as in the treatment of otitis and sinusitis.

More recently with the increase in illicit use and the development of a synthetic form of THC, there has been a revival of interest in potential therapeutic uses. In addition to the experimental uses reported in last year's report, there has been a continued interest in the drug's possible therapeutic value in the treatment of depression and in the possible development of an antihypertensive agent. Most recently it has been found that marihuana reduces intraocular pressure. This observation holds forth the promise that cannabis or some chemically related synthetic may prove useful in the treatment of glaucoma. With the greatly expanded research effort into marihuana and related synthetic materials, there is a strong possibility that cannabis derivatives, very possibly in chemically modified form, will once again achieve medical acceptance in the treatment of a variety of conditions.

Future Research Directions

As our knowledge of the properties of marihuana and related materials has expanded so has our awareness of the many questions that require answers in assessing the health implications of their use. The overall question of what dosages, frequency and duration of use are clearly likely to be injurious to health in various groups remains unresolved.

Because the material in its natural state is quite variable, more needs to be learned about it since the implications of use for different types of marihuana may not be the same. The mode of action of the drug and its many components needs to be elucidated. Little, for example, is presently known about the effects of marihuana on the biochemistry of the brain.

The whole question of interaction between marihuana use and that of other drugs is an important one. Some of the reports of adverse effects may be the consequence of multiple drug use in which one or more other psychoactive drugs in combination with cannabis are more injurious in combination than alone.

The recent report of brain atrophy possibly related to marihuana use needs to be carefully followed up in animals and further clinical studies. Adequate assessment of the psychiatric risks of use require that we do better epidemiological studies to determine the incidence of the adverse consequences that have been reported to date. It would be especially valuable to know the extent to which such adverse consequences occur in those without evident pre-existing psychopathology.

The limitations of relatively small scale, intensive studies of chronic users require that we do more extensive studies of larger populations in order to determine what, if any, are implications of use that may otherwise go undetected. We know, for example, that some of the most serious effects of other drugs (e.g., tobacco and birth control pills) in widespread use would not have been determined but for larger scale study of their use.

Present longitudinal studies of American users should be expanded to determine the longer term implications of use that may not be evident over a shorter time span. Although there is some reason to suspect that many young people, for example, modify their patterns and level of use of marihuana over time, we know little about the factors that influence changes or what changes typically occur.

While we know something about the social conditions of use much more should be learned about the social reinforcements of use—i.e., what are the factors in the user's relationship to others that tend to foster beginning use and to perpetuate various patterns of use.

More needs to be learned about the implications of use for such areas as the operation of motor vehicles, traffic accidents and industrial safety and performance. The economic implications of use should also be explored.

Studies of cultures other than our own may be useful in improving our social means of control not only of marihuana but of other drugs as well.

The extent of need for and the most effective means of treatment for the heavy user of cannabis needs to be explored, since it is evident that with a general increase in the numbers who have ever used has also come a significant expansion in the number who use extensively.

Finally, preliminary indications of possible therapeutic implications for the use of cannabis or its derivatives require careful exploration.

STIMULANTS: An Historic and Affective Analysis

SIDNEY COHEN, M.D.
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The non-medical use of stimulants has a venerable heritage. Milder forms of use such as the social drinking of caffeine-containing coffee, xanthene-containing tea, or theobromine-containing chocolate are hardly worth considering except in the individual who consumes innumerable cups of those beverages daily. Khat (*Catha edulis*) is a pseudonorephedrine-containing plant which is a favorite on the Arabian peninsula. It livens social gatherings and it grows in northeastern Africa.

Coca leaf chewing in the northern Andes goes back to Aztec days. Mixed with lime, the cud is kept in the mouth until most of the cocaine is extracted. Distance in the 2 mile high terrain is measured in "cocadas," numbers of cuds of coca leaves needed to carry heavy packs over the mountainous trails. It is said that euphoria under these conditions does not occur, rather coca leaves act to reduce fatigue and hunger. The poorly clothed, poorly nourished, overworked Andean Indians could hardly manage without the coca leaves which form a part of their wages as porters or for working the mines. Should they migrate to the lowlands, the coca chewing habit is generally lost. When cocaine was introduced a century ago into urban Europe and North America as a cure for alcoholism and morphinism, it produced havoc in the cities where its sniffing or intravenous injection became entrenched. This was the forerunner of a practice which we are witnessing today—the injection of vast quantities of amphetamines.

Just one-half a century ago Ogata synthesized methamphetamine. A few years later the stimulant and euphoriant effects of many amphetamines were described by Gordon Alles. During the past 30 years amphetamines have been used in medicine to treat obesity, fatigue, depression, narcolepsy, certain behavioral disorders of hyperkinetic children, and as an abreactive agent in psychotherapy. It is also a physiologic antidote for barbiturate poisoning.

Methods of Abuse

The abuse of amphetamines has, until recently, been of two types. One consisted of the sporadic, unsupervised use of amphetamines to excel in athletic performance, to remain awake, or to recover from sedative hangover. A second form of abuse has been the regular ingestion of moderate amounts "to keep going," to feel high, or because depression occurred if an attempt was made to stop the drug.

The Japanese experience after World War II should be mentioned in this connection. Large numbers of emotionally depressed people who had to work long hours to survive, readily took to the large quantities of methamphetamine that were dumped on the market. About 5 percent of all adults in some of the larger cities of Japan developed an amphetamine dependence. This epidemic was eventually controlled by elimination of supply sources and increased regulatory measures.

During the past 3 years an unusual manner of abusing amphetamines has been observed in the United States. It is not without precedent: Sweden has experienced a similar phenomenon for over a decade. In Sweden, and to a lesser extent in other Scandinavian countries, large quantities of phenmetrazine are injected intravenously in "binge" fashion.

About three years ago this third form of central stimulant abuse appeared among our drug-using subcultures. In a number of psychedelic ghettos methamphetamine (speed, crystal, meth) began

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to be abused in a cyclical fashion. The people around them call them "speedfreaks."

Involvement with other agents. particularly hallucinogens, often precede high dose amphetamine abuse. Ordinarily, the oral route is used first. Later the crystalline methamphetamine may be "snorted" nasally, or absorbed across other mucous membranes. Eventually, the indescribable "rush" or "flash" which follows immediately upon injecting the material is the sought after effect. The "speed run" continues with 3–5 reinjections a day for a number of days, perhaps a week. Doses are increased because tolerance occurs, and eventually hundreds to a thousand or more milligrams are injected. As much as five grams of methamphetamine a day have been used in this manner.

Amphetamine and methamphetamine are not difficult to make, therefore illicit supplies are readily available. It is a two step process from precursors which are at hand in chemical manufacturing firms, and the profits are substantial.

Physical and Psychological Consequences

This high dose, episodic consumption of amphetamines has produced new pharmacological and psychopathological data. For example, the long taught hypothesis that tolerance to and withdrawal symptoms from amphetamines does not occur, is untenable when we consider the person who consumes fantastically large amounts. An incomplete tolerance to the autonomic manifestations develops although a few instances of circulatory collapse are being reported. Admittedly the abstinence syndrome is unlike the classical narcotic or sedative withdrawal states. It may be called the "central stimulant abstinence syndrome" whose hallmark is an intense psychic and physical depression.

The sequelae of using unsterile material and syringes are identical whether methamphetamine or heroin is injected. Viral hepatitis, for example, is endemic. In addition, there is evidence of parenchymal liver damage due to the enormous doses of amphetamine used. The question of neuronal damage remains unanswered. In animals receiving equivalent amounts, hemorrhagic and cellular alterations are reported. Japanese investigators during their amphetamine epidemic in the early 1950's reported that 10 percent of autopsied amphetamine abusers demonstrated histopathological brain lesions.

Prolonged psychotic reactions are definitely documented from many hospitals serving this population. Whether these represent the precipitation of a pre-psychotic individual into a schizophrenic break, or whether amphetamines can themselves induce chronic psychoses remains undetermined. The treatment of the confined "speed freak" is difficult, and it must be considered a relapsing illness.

The most effective treatment technique so far has been group therapy in which ex-amphetamine users deal with the numerous rationalizations of the patient, and attempt to provide him with a viable alternative way of life.

Despite the signs "Speed Kills" which are seen in places where these people congregate, this is not precisely true. Speed can kill from a paranoid miscalculation of the environment, during homicidal rages, or by an injection of adulterated or contaminated material. But it is by no means invariable. Instead, the disorganization of personality, the disintegration of judgment, the deterioration of health, leaves the "speedfreak" in a limbo, neither psychically alive nor physically dead.

HEROIN USE: Reasons and Results

OLIVER GILLIE, Ph.D.
Assistant Editor, Science Journal

"The sufferer is tremulous and loses his self-command; he is subject to fits of agitation and depression. He has a haggard appearance . . . as with other agents, a renewed dose of the poison gives temporary relief, but at the cost of future misery." This description is not, as might be thought, an account of the action of heroin or morphine on someone addicted to it, but an account of the effects of coffee given by a distinguished pharmacologist at the turn of the century. Tea was thought to be equally harmful and to cause "hallucinations which may be alarming in their intensity." The now universal habit of drinking tea at breakfast was then considered by many doctors to be hazardous in the extreme. "An hour or two after breakfast at which tea has been taken . . . a grievous sinking feeling . . . may seize the sufferer, so that speech is an effort. The speech may become weak and vague and by miseries such as these the best years in life may be spoilt." Knowledge of the action of the drugs present in tea and coffee has come a long way since these early years but ignorance, prejudice, and fear still haunt our knowledge of many other drugs. Scientists are not immune to these fears and prejudices and may even have to adopt some of them as working hypotheses before they can progress.

This does not mean that there are no hard facts available about drug addiction; on the contrary, facts are available from a wide range of disciplines—from pharmacology to sociology.

Curiosity rather than search for oblivion is the reason given by most heroin addicts for first experimenting with the drug, according to a survey of 106 addicts in the U.K. and U.S. conducted by J. H. Willis of Guy's Hospital, London. These addicts had all been admitted to hospital for treatment and had been administering heroin to themselves daily for at least 6 months. Other reasons given for first trying heroin were a search for relief of depressed mood or the elevation of mood above normal. About a third of the addicts recalled, however, that their first experience of heroin had been unpleasant.

Nobody knows how many people try heroin once and find this first taste so unpleasant that they do not persist, but the addicts in the sample studied by Willis were found to begin to inject themselves daily within one to six months of the first experience of heroin.

Comradeship among Addicts

Turning on and "scoring" are two of the words used by drug takers to describe the different stages of a trip; the world of drugs is characterized by a poetic use of language all its own. The person who knows the words and wears the right clothes belongs to the subculture and is accepted with little question. To consider drug addiction without reference to this aspect of the drug experience would be very misleading. Too often in the past, interest in addicts has been limited to the physical aspects of their dependence on drugs and they have been treated as an object to be cured simply by getting them to stop being physically dependent on the drug. Many addicts who have been withdrawn from physical dependence on drugs go back to drugs once more. This is not simply because they "lack willpower," as has sometimes been suggested, but rather because all their friends are "junkies" and they identify strongly with them.

Records show that many addicts have had very disturbing experiences of being rejected or dominated by parents. The drug scene provides a genuine escape into a group which accepts them with little questioning and provides a comradeship

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which they have failed to find elsewhere. This comradeship is expressed not only by their common clothes and language but also by the sharing of many things, often including the syringe used for injection. The sharing of syringes involves a danger of infection with virus which causes jaundice—so much that tracing sufferers from jaundice has been found to be a good way of discovering addicts.

The comradeship of the drug addict sharing his drug and his syringe is similar to the comradeship of the smokers who hand round a packet of cigarettes. Curiously many tobacco smokers are unable to enjoy a cigarette if they are asked to smoke while blindfolded. Apparently, for many people, an important part of the smoking ritual is to be able to observe themselves performing. In the same way the rituals of drug taking are important, and have some satisfaction in themselves—a conclusion which may seem scientifically dubious to some but one which is in fact supported by experiments on animals. This ritual aspect of drug taking may be particulary important amongst addicts in the United States who obtain such small supplies of heroin that they seldom develop the severe physical withdrawal symptoms of the addict on high doses.

As well as providing a ritual, drug use provides a ready identity to the addict. According to Isidor Chein of the Research Center for Human Relations, New York University, the addict's feelings can be summarized like this: "You are a teacher. You are a cop. You are a parent, a man, a woman, a citizen, a voter, a landlord, a housewife. Me, I'm a junkie. A junkie is a person, not a thing." In this way the addict acquires an identity and a set of relationships which have some personal meaning.

Physical Effects

The chemical environment of the body is altered by the presence of drugs and this in turn produces changes in the body cells themselves. This is shown by the common observation that heroin addicts, for example, are able to tolerate higher and higher quantities of the drug. The seasoned addict is able to take doses of heroin that would kill the person who takes the drug for the first time. In fact a number of people experimenting with drugs for the first time do die this way and others experience a bodily response which may be very unpleasant and include severe nausea and vomiting.

The action of drugs can also be measured in terms of the effect which they have on nervous activity. Such studies have shown that opiates such as heroin and morphine reduce the amount of "transmitter substance" which serves to carry nerve messages across synapses from one nerve to the next. It is not known definitely that these drugs have the same action within the brain as they do on nerves outside the brain, but it seems most likely that they do. If this is so then it is possible to explain withdrawal symptoms as being the result of the sudden release of a lot of dammed up transmitter substance, or as a result of the nerves becoming sensitive to transmitter substances during the period when they receive only reduced quantities of transmitter substances. A variety of theories have been suggested, but there is still a lack of facts and still no general agreement as to which is inherently more plausible than the others.

Aspects of Drug Dependence

Study of sleep has shown that drugs do not only affect people when they are awake and aware but also that the quality of their sleep is affected by drugs they have taken. The effect of drugs on people is to deprive them of their dreaming sleep—to deprive them of a fantasy world where vital personal problems may be solved. When people accustomed to using drugs are withdrawn from them they begin to sleep abnormally and spend a larger than normal part of their sleep dreaming—often experiencing fearful nightmares. These disturbances of sleep show that even with the "soft" drugs there is a physical basis to drug dependence.

Amongst other things, these experiments have shown that the distinction between "physiological" and "psychological" dependence was a relic of the past in which medical men regarded the body and soul as dichotomous, whereas today we believe that mental events are determined by brain (physiological) events. The most characteristic feature of any abstinence syndrome is the craving. As this was merely psychological it was accorded little importance. It is, however, absurd not to recognize that it has a basis in brain function, as yet unascertainable, just as all drugs which are said to produce "psychological dependence" do so because they effect brain physiology and change the person's feelings and thoughts."

At present it is not known whether these effects on sleep are direct or indirect effects of the drugs

themselves; however, they are obviously of the greatest importance in understanding the basis of addiction and withdrawal.

Cure of addiction to even the hardest drugs is possible but it cannot be guaranteed. It is necessary not only to rid the addict of the physical craving which his body has developed for the drug but to provide rewarding distractions in the hope that the drug itself will become progressively less rewarding.

III. DRUG ABUSE PROGRAMS: PREVENTION AND INTERVENTION

DRUG ABUSE AND SEDUCTIVE BEHAVIOR: Prevention Through Intervention

PAUL H. BLACHLY, M.D.
Professor of Psychiatry, University of Oregon Medical School

The purpose of this presentation is to enable you to (1) identify persons and situations vulnerable to drug abuse (and other self-destructive activities), and (2) to intervene so as to decrease this vulnerability. The emphasis will be on prevention rather than treatment after the damage has occurred.

We have found it useful to consider drug abuse as one of the seductive behaviors. Seductive behaviors have the following four qualities:

1. Self-Victimization (The Victim actively participates.)
2. Negativism (He knows the danger, but does it anyway.)
3. Short-term gain
4. Long-term penalty

Seduction is not persuasion. For our purposes, seduction is something you do to yourself. Within this framework, seductions may be diagrammed in the following three-hump graph (Fig. 1). The first hump is the hustle hump. It is the investment necessary to achieve the reward. Though a form of punishment, the hustle is coupled with anticipatory pleasure of the reward to follow. The specific reward depends on the kind of seduction; it may be the euphoria or relief of abstinence pain of the heroin addict, the increased buying power of the embezzler, or the relief of anxiety by the person paying off the blackmailer. The punishment may

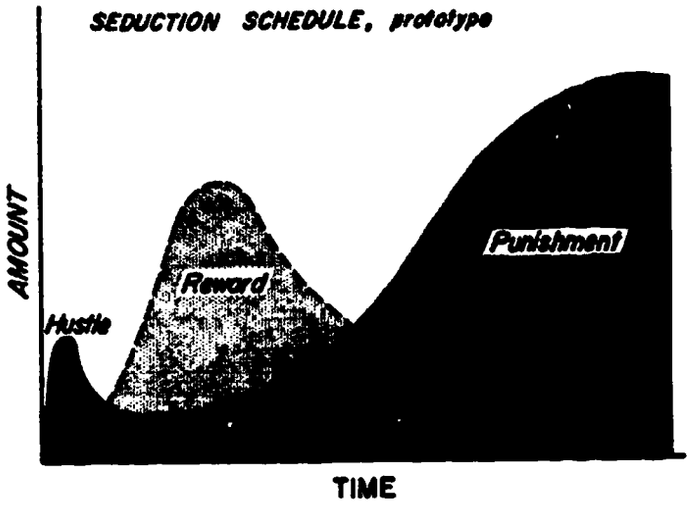

Figure 1

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be the reappearance at an augmented level of all the symptoms that the hustle was intended to eliminate, be they hunger for drugs, financial need, or anxiety. The punishment is intensified by the memory of the previous reward and what rewards might happen again, thus setting the stage for the next cycle of seduction. Aesop's fable of the boy who called wolf illustrates the recurring cycles of seduction, as seen in Figure 2. Criminal law was developed by society to deal with persons engaging in the seductive behaviors. Common knowledge reveals that persons engaged in one seduction are likely to be involved in others.

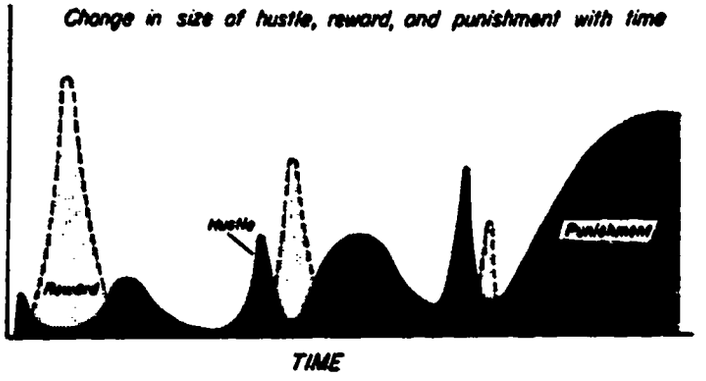

Figure 2

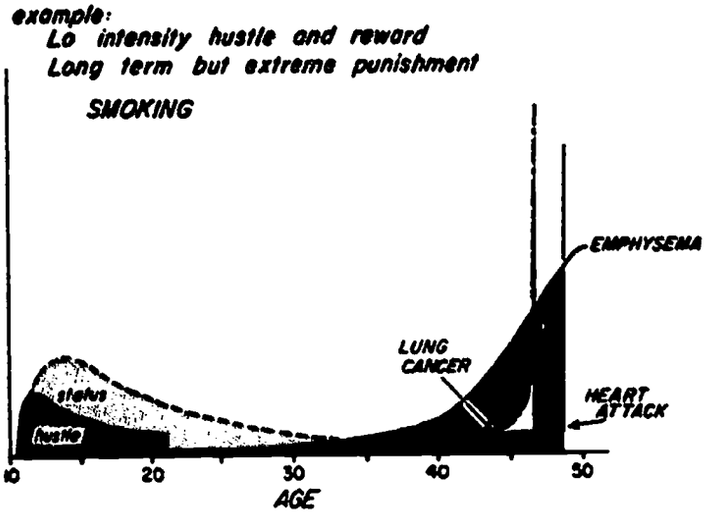

Figure 3

Some illustrations may help solidify the general concept of seduction. Cigarette smoking with a relatively low intensity hustle and reward and a very delayed punishment may be considered at one end of the spectrum (Fig. 3). At the other end of the spectrum, we have seductions of high intensity reward and punishment occurring over a short span of time, such as methedrine use,

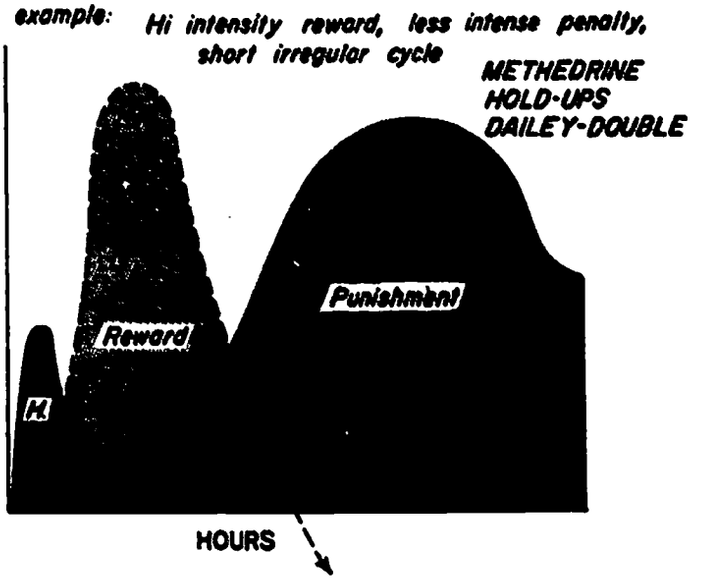

Figure 4

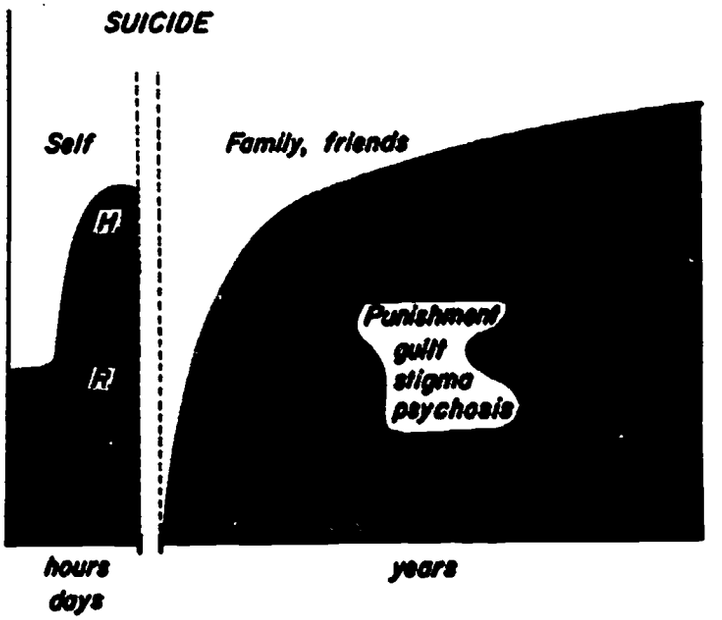

Figure 5

armed robbery, the daily-double, or rape (Fig. 4). And there are special forms such as suicide (Fig. 5).

The implications of the fact that these behaviors are episodic like robbery, rather than continuous like poverty, have not been sufficiently appreciated. The significance of the episodic phenomenon lies in the fact that we can identify high-risk periods and high-risk people and take appropriate action. The fact that we have all engaged in seductive behavior suggests that it is a universal experience, yet we see that most adults engage in such activities rarely; a few seem unable to avoid

them, getting in trouble repeatedly, seemingly unable to benefit from their experience.

Predicting High-Risk Individuals

Let us consider a concept I will call the *seduction threshold*. The common phrase, "every man has his price," refers to the universality of the seduction threshold, which implicitly recognizes that the "price" varies between people and in the same person at different times. The seduction threshold is the likelihood at any specified time that a person will pursue seductive behaviors. Like a seawall, if the threshold is very high, only the spray from storm waves will get over; but if low, waves will be avoided only at low tide and fair weather. Figure 6 diagrams the concept of the seduction threshold for a well-motivated heroin addict during a single day.

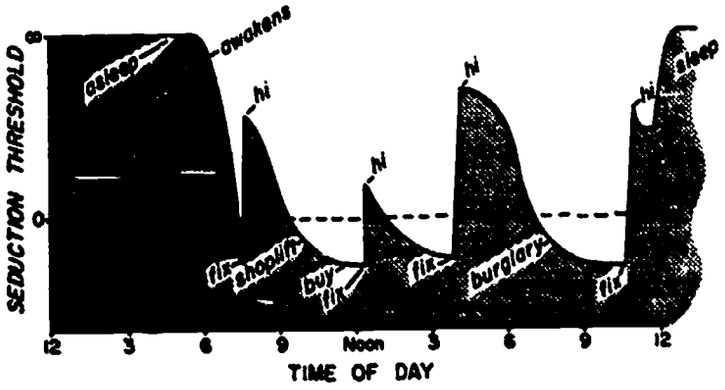

Figure 6

We now have sufficient data regarding human development to predict both high- and low-risk persons and periods as efficiently as we can predict the weather. And our ability to change behavior may be even more advanced than our ability to change weather.

This predictability may be dramatized by considering how we might maliciously and deliberately set about in childhood to grow a person to be a high risk for seductive behaviors. The fundamental rule is to structure the environment so that the child is unable to make any long-range allegiances or predictions; particularly, make it impossible for him to predict the consequences of his own behavior. Operationally, this can be done by first breeding the child to have sufficient energy and drive to react with the environment rather than withdrawing into himself. Then raise him (her) by multiple caretakers in a variety of "homes," seeing to it that he remains with no one home or caretaker more than 6 months. At ages three to five see that the father is frequently drunk, away from home, or capricious. We must emphasize the capriciousness, for if the parent is always unreliable, brutal, drunk, or psychotic, the child will learn to predictably discount him. Greater damage seems to occur when the parent is unpredictably "normal." Meals and bedtime should be at irregular periods and amounts. As he grows older, move 2 months to a year after he has established friends in the neighborhood. In this way he will have indelibly learned to live for the moment, make no intense or long-term investments in people or course of action. Because his commitments are neither sustained nor intense, he will not experience the intensity of depression felt by persons who develop predictable sustained behavior habits. But, assuming average intelligence, he will have learned the proper verbal responses such as "Yes" or "I'm sorry" to such questions as "You know you shouldn't have done it," for such responses usually result in short-term gain.

In adolescence he should be placed with adults whose predictions are frequently wrong, who say, "You'll be punished if you do that," or "If you're good or work hard you'll be rewarded," but who can predictably deliver neither punishment nor reward.

Because of inability to trust persons, the high-risk person has less capacity to benefit from the experience of others. The child who frequently moves must associate with children who are in the same dilemma or those rejected by more stable elements. Thus, advice from seduction prone peers is little better than his own. And "identity," that feeling of comfort stemming from predictable human reference points, may have to be obtained by forcing excessive stimulation or predictable "punishment." Punishment is preferable to nothingness. And rather than no consultation, he will use that of peers. With this background it should come as no surprise that such a person will repeatedly be involved in a variety of the seductions. Proclivity for a single seduction such as burglary or drugs is rare. But the choice of seduction, that which is most commonly practiced, may be in part an accident depending on the fashions of his times and peer consultants.

"He was such a good boy (girl), came from a fine family; no one would have thought he (she) would have got in that kind of trouble." "He (she) used to be such a hell-raiser, in one scrape after

another, father was a lush, but he sure turned out well." Such common expressions reflect the everyday observation that a high-risk or low-risk person may drastically change his behavior. Although often attributed to miraculous or idiosyncratic events, careful observation usually reveals that definable changes occurred in the person's environment or internal physiology.

Changes in the body's functioning influence both the specific vulnerability and the energy brought to bear on the vulnerability. Normal thirst may whet the pathological appetite of the alcoholic. Normal hunger may increase the chance of theft.

The environment acting upon a background of heightened physiological drive sets the stage for seduction. It is probably impossible to separate the geographic environment from the interpersonal environment, for a change in one usually assures at least some degree of change of the other. *Whenever the environment becomes unpredictable, the seduction threshold falls.* A country whose national policy seems senseless or unpredictable will experience a predictable increase in all the seductive behaviors. A family experiencing multiple uncertainties. marital, financial, geographic, will produce seduction prone persons.

Counteracting Seductive Behavior

We may use the concept of seduction threshold by considering in detail a specific person or population over time. We predict the periods of lowered threshold and bring to bear counter measures designed to change the internal physiological factors and the environment so as to raise the seduction threshold. On a broad scale, we know that the seduction threshold is lowered during adolescence, mating, loss of job, menopause, and at retirement, as in Figure 7.

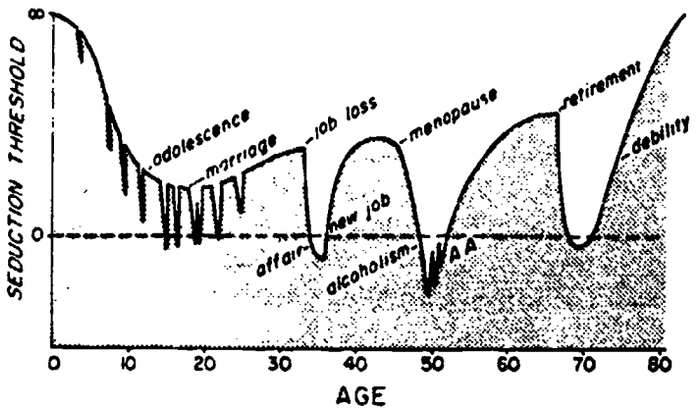

Figure 7

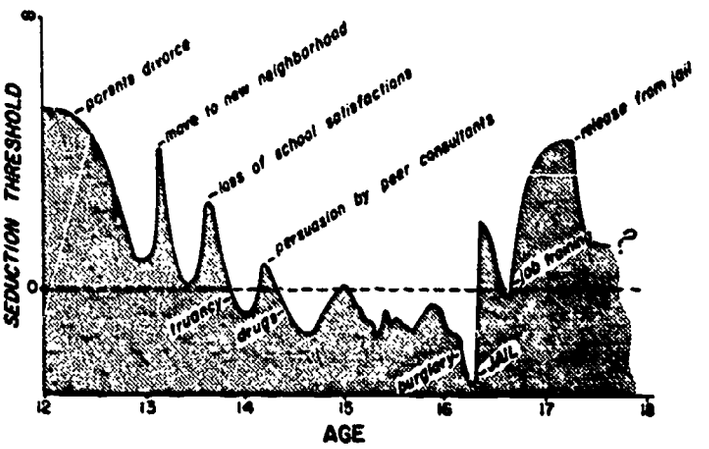

Figure 8

We can plot it more specifically, as for the adolescent years shown in Figure 8. That children are vulnerable at the points shown is universally acknowledged, but rarely do we take definitive, aggressive, constructive action to minimize the predictable consequences. I submit that the teacher, the physician, the minister, and the police must do more than pick up the predictable casualties. They must take active steps to intervene at the peaks shown in Figure 8, which will insure that life becomes meaningful and predictable. You see, drugs, even more than being able to relieve anxiety and depression, are exceedingly predictable.

For seductions already started, we simultaneously attempt to lower all the three humps on the seduction schedule, e.g. providing the teenager with a jalopy so he does not need to steal one, letting the truant get a job, or providing methadone to heroin addicts.

It is no accident that the major turning points in the seduction threshold involve changed interpersonal relationships. Because of their predictable effects, drug pleasures can substitute for people pleasures. But so can the other seductions. Effective intervention, then, involves not only eliminating the humps on the seduction schedule, but initiating predictably satisfying people pleasures that can be sustained.

Prophylaxis of drug abuse will become a reality when society as reflected in the mass media recognizes that seductive behaviors are learned ways of solving problems, used when the seduction threshold is low, and uses its collective influence to maintain a high threshold. It will do this by deemphasizing impulsive problem-solving techniques as seen on television, discourage unnecessary geographic mobility, emphasize personal allegiances, and recognize the social advantages of personal intervention at crisis points.

TREATMENT AND REHABILITATION: A Multi-Modal Problem

JEROME H. JAFFE, M.D.
Director, Special Action Office for Drug Abuse Prevention, White House, (Formerly) Director, Illinois Drug Abuse Program

Treatment should help compulsive narcotics users become law-abiding, productive, non-drug-dependent, and emotionally stable members of society. On this ideal set of goals there is almost universal agreement. Beyond it, however. there is bitter discord. And the bitterest differences center on what behaviors we can accept short of the ideal.

Many who have worked in this field for years continue to believe that most drug users, given adequate supervision after a period of drug-free living, will eventually give up the use of all illicit drugs, if only to avoid an involuntary return to an institution. Others, equally expert, now believe that there is no one reason for starting to use narcotics, no characteristic user personality, no single pattern of use, and no single inevitable outcome. In short, all narcotics users are not the same—therefore, there is no single treatment to which every user should be expected to respond. Further, they believe that it is unrealistic to expect every narcotics user to reach all of the goals in our ideal set, and that total abstinence from all drugs is not the most important treatment goal for all users.

This concept of drug-user heterogeneity is still not fully accepted. There are some who continue to feel that compulsive narcotics use can be viewed as a single problem. Indeed, there are some who minimize the differences among individuals who use different kinds of drugs—overlooking distinctions between the pharmacological and physiological effects of the narcotics (morphine, heroin, codeine, methadone) and those of other drugs such as the central-nervous-system (CNS) stimulants (amphetamines, cocaine), the CNS general depressants (barbiturates, alcohol, and other sedatives), and the psychedelic-hallucinogen group (LSD, mescaline, marihuana).

It is possible to classify any drug as a "narcotic" under the law, as the Harrison Act of 1914 did with all substances found in opium, even though many of them have no subjective effects. But in pharmacology the term "narcotic" is now used only for those substances with actions similar to those of morphine. The capacity of morphine-like drugs to produce physical dependence is well known. Physical dependence and "addiction" are not synonymous. Drugs other than narcotics can cause physical dependence, and not all withdrawal syndromes are associated with drug-craving. "Addiction" usually means that getting and taking the drug pervades the user's entire life. The craving or "hunger" for narcotics preempts all other values and interests. And somehow it seems that the hunger is not ended merely by withdrawing the drug, but seems to persist long after the measurable signs of withdrawal are gone.

Methadone vs. Heroin Maintenance

Logic suggests that any chemical that stops the craving should be considered for use in treatment. Of course the narcotics themselves can satisfy this need. In England the stabilized addict is now a rarity. Although British physicians are still permitted to prescribe narcotics—including heroin—for narcotics addicts, most users inject narcotics intravenously. Because of the short-acting, up-and-down effects of heroin taken this way, the user remains preoccupied with the drug. In order to permit normal social function, medical therapy should eliminate narcotic hunger and simultaneously discourage the use of intravenous narcotics.

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Methadone maintenance is a treatment pioneered by Vincent Dole and Marie Nyswander of New York's Rockefeller University. Methadone is a synthetic narcotic, in use for more than 20 years, that has most of the analgesic and respiratory-depressant effects of other narcotics. It is apparently more effective when it is taken orally than such narcotics as morphine are. When it is given repeatedly methadone has a cumulative effect, so that its capacity to prevent withdrawal symptoms lasts longer than that of heroin or morphine. Methadone's withdrawal syndrome is considerably milder than heroin's or morphine's, though it may last 12 to 15 days rather than heroin's four to six days.

For more than a decade we have known that small doses of methadone would prevent withdrawal symptoms in physically dependent narcotics users. Dole and Nyswander found that a dose of methadone several times the size necessary to prevent withdrawal symptoms not only relieves the persistent drug hunger that often plagues the former user after withdrawal but it also produces a marked tolerance to opiate-like drugs, including methadone itself. Thus the patient treated with high doses of methadone is so tolerant that he experiences no rush from narcotics and few, if any, of the effects of the methadone. In 1968, more than 1,000 former heroin users were being treated in the Methadone Maintenance Program in New York. Two-thirds of them were either working or attending school. Both heroin use and antisocial activity have decreased dramatically. Methadone-treatment programs in other cities are now achieving similar results in terms of reduced crime rates and increased productivity levels.

Prescribing heroin for all addicts is a far less satisfactory approach. One of the most perplexing problems is the young user who insists on sharing his drug-using experiences with friends—by sharing his heroin. The number of young heroin users in England rapidly increased from a handful in 1954 to more than a thousand in 1968. This is the doctors' dilemma: if they prescribe all of the heroin the young addict claims he needs there will be excess supplies that will eventually create new users. If they prescribe less, they open the door to a profit-oriented black market. In an effort to stem the increase of new users changes have been made in British regulations to restrict heroin prescription to a few physicians with more specialized training.

In contrast to these problems of prescribing heroin, methadone is given only for oral use—and frequency and dosage are determined by the doctor. Because a single dose of methadone lasts for 24 hours or longer, staff members can watch the patient take each daily dose and thereby prevent sale of the drug to new addicts. More important there is no sudden, drug-induced high, to be followed within a few hours by withdrawal symptoms. After a few weeks the effects of methadone are barely felt. In short the differences between the psychologically and physiologically disruptive effects of heroin taken intravenously and methadone taken orally may be functionally more important than the fact that they are both narcotics.

Narcotic Antagonists

A recent and entirely different approach to treatment is the use of narcotic antagonists—drugs chemically and structurally so like narcotics that they can apparently occupy the place in the nervous system where narcotics act. Yet the antagonists have little or no narcotic effects. By occupying these places they prevent or reverse narcotic action. For years the antagonists were used only in the treatment of narcotic overdose and in the Nalline test to check for recent narcotics use. A few years ago William Martin and his co-workers at the Addiction Research Center in Lexington, Kentucky observed that cyclazocine, a long-acting, oral antagonist could prevent patients from feeling the effects of a standard dose of morphine. As long as the patients took cyclazocine regularly morphine did not produce physical dependence, even when it was given several times a day for several weeks.

Cyclazocine is not considered a narcotic. Users do not desire it as they do opiates. Given to a person who is physically dependent on narcotics, cyclazocine will bring on withdrawal symptoms rather than prevent them as methadone does. Among its limitations are side-effects that some patients find unpleasant. Martin and his co-workers found that naloxone, a new antagonist, is almost free of such unpleasant side effects. But other studies have shown that its duration may be too short and its cost too high for it to be useful now.

Antagonists may provide a means to "unlearn" drug-using behavior. Some researchers believe that in addition to personality problems that might predispose a person to start using narcotics, the compulsive user gradually acquires a complex set of conditioned responses that tends to perpetuate

drug use. Each use of the drug, each reduction in tension (whether caused by anxiety, depression or anger), reinforces the preceding behavior, producing a progressively stronger desire to take the drug again. With repeated regular use, physical dependence develops. Then each drug use relieves a new tension—the withdrawal syndrome.

Theoretically it makes little difference whether the addict seeks euphoria or relief of tension. The best way to reverse the conditioning process would be to have him use narcotics in his old haunts—but get no effect. This lack of effect will be the case if the addict takes narcotic antagonists on a regular basis. While many researchers do not feel that the addiction process involves conditioning, the use of antagonists makes it possible to find out.

Narcotic antagonists also have additional value. Since they prevent a patient who uses narcotics occasionally from becoming physically dependent, they can make it possible for him to continue work or participate in a rehabilitation program. Also the likelihood of a fatal overdose is reduced if not eliminated.

A drug that prevents narcotic action obviously cannot stop a person from associating with other drug users, halt his antisocial behavior or give him vocational skills or hope for a better life. To be effective it must be part of a broad program of social rehabilitation. The number of patients now receiving antagonists is still too small to permit a prediction of how useful the treatment will be.

The major advantage of the antagonists is that they are not narcotics. They have virtually no abuse potential and can be given to the patient for self-dosing. While stopping the use of antagonists like cyclazocine may cause some reactions, these are far less serious than opiate-withdrawal symptoms. After the patient has been doing well for some time, cyclazocine can be stopped to see if improvement is maintained. This is harder with methadone because of the withdrawal symptoms that occur when it is stopped. There are no problems in discontinuing pure antagonists like naloxone. Long-acting forms of cyclazocine and naloxone are now under development.

Institutional Treatment

Far different from either methadone or cyclazocine are programs for compulsory institutional treatment in a drug-free environment (hospital or prison), followed by close supervision in the community.

These programs have been criticized for trying simultaneously to rehabilitate users and protect the public from their antisocial behavior—sometimes incompatible goals. They have also been attacked for being ineffective and insufficiently concerned with the users' civil rights.

John C. Kramer and co-workers reported that one year after release from the 14-month-long institutional phase of California's civil-commitment program, only one patient in three was still drug-free and in the community. The results of a supervisory program in Maryland are similar to those obtained in California. At the end of a year there were virtually no continuous abstainers among released prisoners who were required to abstain from narcotics and to submit daily urine samples for chemical analysis as a condition of parole from Maryland prison system. More than 80 percent had returned to prison.

There may be some narcotics users who will benefit from civil-commitment or close-supervision programs. But it remains to be determined how these programs will mesh with other voluntary programs, and whether their use will be restricted to those addicts most likely to benefit from them.

Therapeutic Communities

Another distinct approach involves the establishment of complex social systems that are run almost entirely by ex-addicts. Such organizations as Synanon (California), Daytop ViHage, Phoenix Houses, Odyssey House (New York), and Gateway Houses (Chicago) contrast sharply with the civil-commitment institutions. Rather than being involuntarily confined, residents in these communities are free to leave at any time. In fact they must at all times demonstrate willingness to conform to community rules and spirit in order to remain.

Many former compulsive drug users are able to remain drug-free and function productively while they are in such communities but how they do after leaving is not certain. Some critics feel that this approach falls short of returning ex-users to their homes sound in mind and body. But even if this is so, providing a voluntary, specialized community in which addicts can live a useful life is still a worthy enterprise.

Of the different approaches this one appears best suited at present to produce a drug-free, productive person who does not need continued medical care or psychological treatment.

Diversity of Treatment Philosophies

Perhaps the diversity of approaches can be traced back to fundamental differences of opinion about the causes of compulsive narcotics use. At one extreme are those who believe that the persistent craving for narcotics may be a result of a metabolic or physiological change caused by repeated narcotics use—a change that persists for many months after the drug is withdrawn. At the other extreme are those who believe that narcotics are used for purely hedonistic purposes, by basically delinquent persons who are either completely unconcerned with what society expects or who are too immature to weigh the possible long-term consequences. In between the extremes are those who believe that narcotics are used by the emotionally disturbed to treat their own psychological difficulties or by the economically deprived to escape the reality of their limited opportunities or by those who, having repeatedly experimented with drugs, have conditioned themselves to respond to certain situations with drug-taking behavior.

All of these views have some validity with respect to some drug users and all of these factors may play some role in narcotic addiction. Future studies may help create rational treatment by showing that one factor is more significant than another for some specific types of addicts. At that point the treatment indicated would be the one best suited to correct the significant factor. It does not seem likely that such studies will come quickly. Compulsive drug use is a chronic problem rather than an acute one. To provide meaningful information, research projects must follow the user over several years, and short-term results are usually of little significance. Presently every approach that offers some chance of reaching at least one socially acceptable goal is in use and several are the subject of careful, critical, controlled evaluations.

However, serious problems arise when a number of different agencies offer different treatments based on radically different philosophical premises. Sometimes the user becomes locked into a system that may not be appropriate for him. If a user does not show satisfactory progress toward the goals of that treatment program, he will be discharged from voluntary programs or more closely confined or supervised in the involuntary programs. An agency rarely admits that its approach may not be suited to a user's needs at that point in his life. At best the voluntary programs permit their failures to drop out and find their own way into other treatments if they can. Other programs often have long waiting lists and the user may not be treated for months. At worst, he is imprisoned--legally—in an inappropriate program for months or years.

A Multi-Approach Program

The problem of moving from one type of treatment to another could be solved by a multi-modality program with a central entrance, from which users could move into a number of philosophically and operationally distinct treatments. Assignment to different systems could be based on individual preferences, on the dictates of a research design, or—if it becomes available—a rational judgment based on knowledge of what kinds of individuals do best in which programs. Once the user enters a particular program his or her progress would be followed. When the program or the patient feels that satisfactory progress is not being made he would be reassigned to another program. The problem of starting and coordinating a number of different programs is obviously more difficult than establishing and evaluating any single approach. Yet it seems as if only such a coordinated effort would be able to identify which specific treatments were best suited to reach particular goals for various types of addicts.

A cooperative project of the State of Illinois Department of Mental Health and the University of Chicago Department of Psychiatry took in its first patient in January 1968. By July 1971 it was fully operating and included 26 treatment centers in different locations, linked by weekly staff meetings and central entrance and evaluation procedures. The total program, now serving more than 2,000 persons, offers methadone maintenance, therapeutic communities, hospitalization and halfway-house facilities, group therapy, and the use of narcotic antagonists.

Each approach is run by persons who believe in it. While at first no one geographical center attempted all approaches, that was obviously a logical next step. Such a program is now being operated successfully. Total abstinence, methadone maintenance, and narcotic antagonists are all being used within a therepeutic community directed by ex-addicts. Because of its multi-modal approach it provides an ideal training experience.

Although it now appears that a multi-approach program can work in a single structure it is still too soon to gauge the effectiveness of the individual parts, or the efficiency of the total multi-approach concept. But it is already unequivocally clear that where vested interests have not developed and treatment of narcotics users has not become politicized, people with widely different philosophies can not only talk together but actively cooperate.

COMMUNITY THERAPY: Appraisal and Design

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In general, treatment and rehabilitation have never been available for narcotic addicts in the United States. There has been only token treatment for small numbers in prison hospitals or State mental hospitals. Then there evolved a number of self-help approaches such as the Black Muslim movement, Daytop, and Synanon, which have been of significant help to only a small minority of addicts.

Now comes methadone maintenance treatment, which is being widely promoted not only as the cure for heroin addiction, but also as the answer to "the drug problem." It is falsely and harmfully stated that addiction is an incurable disease, that all heroin addicts have a permanent metabolic disorder, and they must take moderate to large quantities of methadone for the rest of their lives.

As more and more new people and programs enter the previously totally neglected field of drug abuse, it is important to remember that there are many pros and cons about all aspects of the drug scene, and it is better to stick with the pros and avoid the cons. Methadone in particular appeals to our craving for over-simplification and for quick, easy chemical "solutions" to problems. It satisfies those who can claim that they are doing what needs to be done to solve the drug problem by setting up methadone programs.

While attempting to put methadone or any other treatment in perspective, there should be no question that it is better to be on a legal, long-acting, orally administered, inexpensive narcotic, methadone, than to be a street heroin addict forced by social policies to seek out a very high priced, illegal, short-acting narcotic which must be injected. However, we have a responsibility to see that addicts have available more than this one option. There is absolutely no evidence that heroin addiction or any other form of drug abuse, including alcoholism, tobacco smoking, etc., are genetic, biochemical or metabolic in origin. They are primarily social in origin, and secondarily psychological. The traditional stigmatization of the addict and his segregation must be ended.

Paper submitted specifically for second edition of *Resource Book for Drug Abuse Education*.

Variety and Flexibility in Treatment

A wide range of treatment approaches are available for heroin addiction and other drug abuses, and the best program is one that makes fully available all traditional and innovative approaches for long-term out-patient help and allows the affected individual to participate in the decisions as to which combination of methods will be utilized. Methadone should never be presented in isolation or stressed as the best or only treatment available for heroin addiction. When it is presented, hopefully as part of a comprehensive rehabilitative effort which all addicts are urged to participate in, its benefits should not be overplayed, and its possible deficiencies should be fully discussed. The value should be communicated to the addict of working toward freedom from methadone as well as from heroin, the goal being to become a free and independent person able to be fully and constructively involved in this society.

Acceptance, understanding, and moral support, along with self-help approaches, group and individual psychotherapy, social work services, vocational counseling, job finding, cyclazocine, and methadone can all be valuable components of the rehabilitation of heroin addicts. Methadone withdrawal treatment, presently prohibited in California, except under rare circumstances, needs to become fully available to any addict desiring to kick heroin, and more methadone maintenance programs, particularly private, non-governmental ones, are badly needed in this and other urban areas. The best programs will avoid assembly line,

indiscriminate placement of people on indefinite methadone maintenance, will stress privacy and confidentiality, and will seek to stabilize the addict on the lowest possible maintenance dose that enables avoidance of most or all heroin use, i.e., "social blocking."

Methadone maintenance, even if it were 100 percent successful, represents only one technique for treating the drug abuse problem in America. It doesn't at all help, and in fact, diverts us from the massive drug abuse problems of alcoholism, pills, cigarette smoking, drunk driving, etc. With sufficient knowledge and commitment, outstanding rehabilitation programs can be developed with very little money in any community.

A Public Approach to Health Care

A model help center should be developed. Based on innovative, flexible organization and direction it would develop:

1. A voluntary association of people dedicated to solving problems in a non-hierarchical, status-free manner.

2. A research, educational, and training program.

3. A new model of health care: accessible, human, oriented to keeping people well, open to all seeking social health, irrespective of ability to pay, comprehensive and making maximum use of paraprofessionals.

4. A clinic that eliminates the pathological frame of reference which labels and stigmatizes, where staff relates to those who come for help as individual human beings who seek aid for one area of their life, and where they will receive help from an interdisciplinary staff.

5. A bridge over the increasing fragmentation of our society that will seek to involve all people rather than exploit or exclude separate groups.

This truly public approach to health care and help may renew hope as well as solve particular problems.

If an individual sees no hope but dope in his life, he is far more likely to use dope. Drugs are always a symptom for the individual and society, rather than existing in a vacuum. These are human problems and social problems which require a provision of numerous positive alternatives to drugs, deep involvement in social change, and an awareness that man cannot live by chemicals (or bread) alone.

DRUG ABUSE RESEARCH: Current Directions

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As drug abuse escalates, and as evidence of new abuse of more chemical substances appears, the social and public health problems related to our "drug culture" grow in complexity. The broad range of narcotic addiction and drug abuse problems of today demands commitment and action from many segments of society if we are to reverse this problem. At the National Institute of Mental Health, our contribution to the solution to drug abuse includes a broad program of basic and applied research, and translating research findings into programs of treatment, rehabilitation, and education.

The NIMH research program includes broad investigations of the underlying causes and consequences of various kinds of drug abuse, epidemiologic surveys, research on the basic modes of action of psychoactive drugs, identification of agents that have a high abuse potential, studies designed to gain an understanding of the basic pathophysiology and psychopathology of the drug-dependent individual, development of innovative and effective treatment methods, and a constant search for effective means of prevention.

Narcotic Antagonists

One area of research with great potential for providing effective methods of combating narcotic addiction is the development and testing of improved narcotic antagonists. These are drugs which occupy the sites on the nerve cell that heroin ordinarily would occupy. If these sites can be blockaded by safe agents, the heroin will not produce a "high." The precise nature of the narcotic binding site is being intensively studied. The more we can learn about how opiates interact with the nerve cell, the better the chances for finding an optimal chemical deterrent.

Two narcotic antagonists, naloxone and cyclazocine, have already been developed and are in use in rehabilitating narcotic addicts, but these drugs have the disadvantages of being relatively short acting and of producing undesirable side effects in some addicts.

Because of the important potential of antagonists, the NIMH is expanding and accelerating its direct and supported research in this area. Long-acting narcotic antagonists which are free of serious side effects and toxicity could be useful in blocking the euphoric high which acts as a strong reinforcer of drug-seeking behavior and aids the addict during the period of prolonged abstinence when he craves the drug.

A promising lead is the development of a technique to implant narcotic antagonists under the skin. Research is being conducted to develop a device representing a combination of polymer plastic and an antagonist compound to permit slow release of the antagonist over an extended period of time. Such a device would greatly extend the effective duration of cyclazocine and other antagonists and make repeated medication less necessary.

There is also a need to develop specific antagonists to drugs of abuse other than heroin. Further, the possibility has been indicated in preliminary investigations of developing a viable immunization approach to drug abuse control. By coupling a psychoactive chemical molecule to a protein, we may be able to prepare a vaccine whose action with respect to a specific drug or a wide range of substances would be similar to vaccination against measles. Long range and thorough investigations will be required before such a procedure would be possible. There are also unresolved moral issues that impinge on this possibility, of course. If such a vaccine were developed, the issues of whether or under what circumstances it should be administered would still have to be considered.

Methadone Maintenance

The rapidity with which methadone, a synthetic narcotic, has been picked up as a treatment agent for heroin addicts indicates there is strong interest in this approach. Oral methadone erases the physiological craving for heroin, prevents euphoric effects from injected heroin, and makes the addict more amenable to other forms of therapy. A well-run methadone maintenance program can reclaim a large number of heroin addicts who want to kick the habit. However, methadone must be taken every 24 hours, and a patient may spend hours in traveling and waiting for his medicine. Ideally, he could be given a supply to take home, but this can and does lead to a misuse of the drug by some, and to diversion of the drug into illegal channels. Further, although methadone enables the patient to lead a more normal life, an unfortunate drawback is that methadone is itself an addicting drug. The NIMH has continued concern that this therapy not be adopted uncritically and that there be adequate evaluation of all aspects of this approach. It is important that we have a complete understanding of the implications of methadone treatment for all aspects of the individual's functioning, both physiological and behavioral. A program of treatment research has been initiated by the NIMH to determine the effects of continued use of methadone and to evaluate substitute variants of methadone.

A potentially important development in methadone maintenance therapy is the introduction of l-alpha-acetyl methadole (LAAM), a long-acting methadone which has the advantage of being effective for 48 or even 72 hours. NIMH-supported research is underway to study the chronic psychosocial, psychological, and cognitive effects of methadone and LAAM in the treatment of heroin addicts.

The abuse of other drugs, including multiple drug abuse, is also of significant concern to the National Institute of Mental Health, and research on LSD and the so-called "soft-drugs" is underway to develop an understanding of these substances and their use and abuse.

LSD

Few drugs have had so profound an effect on American culture in a short space of time as d-lysergic acid diethylamide, familiarly known as LSD. Its use helped to create the drug-using subculture of today. The mechanisms by which LSD, the most powerful and dramatic of the hallucinogens, exerts its effects are poorly understood. NIMH supported investigators are studying its mode of action and effects in disrupting behavior. Other drugs which share some of LSD's properties —mescaline (derived from the Peyote cactus), psilocybin (a mushroom derivative), dimethyltryptamine (DMT), and other chemicals—also demand further study, especially with respect to their use by and effect upon youths.

Marihuana

Our knowledge of the complex issue of marihuana has been significantly advanced in the past year through an intensive research program in this area. It is still not possible, however, to give simple answers to all of the questions about marihuana use. It has become increasingly apparent that satisfactory answers must take into account the many factors of potency and frequency of use, the context of use, and the age and physical and psychological characteristics of the user. (See summary of the second annual report on *Marihuana and Health* from the Secretary of Health, Education, and Welfare to the Congress, which appears elsewhere in this *Resource Book*.)

The marihuana issue has become a "lightning rod" issue in our society. That is, the debate around whether marihuana should be legalized, whether penalties should be lessened, or whether laws ought to be tightened, is not easily separated from many other social concerns of today, such as the communications problem between generations, a host of moral questions, or even the issue of the Vietnam war. New information about marihuana from research investigations should help to clarify the appropriate place of marihuana in our society.

Barbiturates

Another area of continuing research interest is barbituates. These substances are abused by young and old alike. They can be fatal to both. Taken in high doses, the effects of barbiturates resemble alcoholic drunkenness: confusion, slurred speech, and staggering. The ability to think is impaired; emotional control is weakened. Barbiturates are physically addicting, and withdrawal is difficult and more dangerous than withdrawal from heroin. Current research is aimed at treating barbiturate poisoning, developing antagonists for barbiturate drugs, and discovering safe, non-toxic sedatives which might supplant the extensive use of barbiturates.

Stimulants

Amphetamines—stimulants—used medically for narcolepsy and to treat some hyperactive children with behavior disorders, as well as often prescribed to combat fatigue and curb appetite, are widely abused. Prolonged large doses of amphetamines produce a paranoid-type psychosis—often accompanied by aimless behavior. Sudden stoppage after a period of large doses may evoke depression. Unaccustomed high doses of methamphetamine (speed) may cause death.

The NIMH is particularly concerned about a recent upsurge in the high dose, usually intravenous, abuse of methamphetamine ("meth," "speed," "crystal"). Increasing numbers of young people are using a hundred times the average dose in a single injection, which may be repeated a number of times daily. Such "speed freaks" may exhibit impulsive, paranoid, unpredictable behavior and are a danger to themselves and those around them. When this severe misuse of methamphetamine is prolonged, malnutrition, hepatitis, brain cell damage and cardiac arrhythmias become possibilities. This problem is being studied at the Institute's Clinical Research Center, and the NIMH has awarded several grants in the area. One investigator is studying the long-term neurophysiological consequences of prolonged amphetamine intoxication. This study should aid in our understanding of the mechanism whereby amphetamines produce psychosis.

There is also a critical need for methods of investigating the abuse potential of new sedative and stimulating drugs as they come on the market, in order to reduce the possibility of widespread abuse. New psychoactive agents must be adequately screened to minimize the likelihood that they will be abused, whether used alone or in combination. A number of research investigators are exploring the abuse potential of these drugs in animal models to determine possible hazards and to find clues to intervention techniques.

In order to prevent new highly addictive drugs from entering the commercial market, the NIMH is also testing pain relieving drugs for their potential for abuse. At the same time, the search goes on for an effective pain killer that does not produce addiction.

Research also is in progress to improve detection tests for opiates, barbiturates, and amphetamines. These tests are used frequently during rehabilitation of the addict or drug abuser to check on his abstinence. New tests promise to reduce the expense, complexity, and chances for error inherent in present techniques.

"Street" Drugs

To date, most research on specific drugs has focused on a pure drug model, which represents a logical starting point, but which has limitations in considering drugs as they are actually abused through everyday use in a "street" milieu. Whether the drug is heroin or marihuana, as typically used it is usually not a pure compound. In research designs which closely approximate actual use patterns it should be possible to more adequately assess the effects of such drugs. Such work may go far toward explaining deaths and other critical consequences of drug use and thus lay the groundwork for better treatment and prevention efforts.

Further research is needed to answer the question of why some people abuse drugs while others do not. Studies of social, personality, economic, and other factors and more extensive investigation of illicit drug taking and its consequences will help to establish which people, under what circumstances, are more likely to use drugs, abuse drugs, need or become dependent on drugs, or have toxic reactions from drugs. From research on the reasons why people abuse drugs, how they become dependent on drugs, what effect the drugs have, and how they can be helped will come flexibility in treatment and rehabilitation and innovation in the types of programs established for treatment and intervention.

Treatment

Many modes of treatment are necessary to help different addicts and drug abusers and to motivate them to adopt socially responsible behavior patterns. New community-based approaches show promise of much more success than resulted from the traditional methods that relied on criminal commitment to isolated prison-like narcotic hospitals.

Evaluation of treatment methods shows that no single approach suffices for the majority of the population at risk. Thus, the NIMH-supported treatment programs stress the development and evaluation of new techniques of group and individual counseling and draw upon community resources for specialized medical care, job placement, and training.

Education

Research and evaluation is also being increasingly stressed in drug abuse education. A critical look at what is being accomplished in the multitude of public educational efforts which have been initiated throughout the country is required in order that we will know which educational techniques have been successful in bringing about attitudinal and behavioral changes, and which have not. Utilizing this knowledge, we can improve present programs and develop innovative new techniques in public education.

The NIMH has underway a program of support for drug abuse education projects through grants to States and public or private non-profit organizations. Grants have been awarded for projects ranging from large-scale community-based drug education programs to individual school projects designed to develop innovative curriculum through student-produced materials. The results obtained from these projects should prove helpful to other organizations in developing effective drug abuse education programs.

In addition, the Institute is continuously evaluating its own efforts in developing and conducting a range of national educational activities through a variety of films, printed materials and public service media materials. Studies to measure the impact of mass media drug abuse information campaigns will help provide us valuable evaluation feedback.

These are but some of the areas in which progress has been made and in which further studies are needed. Obviously, not all of the problems which will require research over the next several years can be anticipated. It is clear, however, that if we are to cope more effectively with the mounting problem of drug abuse the research effort must be continued in all areas.

It is through basic research on the neurophysiological mechanisms of a drug's action and the chemistry of a substance that we can develop effective treatment techniques. It is through studies of the social, economic, and environmental conditions that encourage and reinforce a drug culture that we can check and prevent the spread of drug abuse. It is through greater understanding of the drug-dependent individual, and the individual at high risk, that we can devise methods of intervention and education.

We have made great gains in understanding drug abuse, but we must continue to look for new answers in order to prevent and reduce the adverse consequences of the abuse of drugs in our society.

IV. DRUG ABUSE EDUCATION: PRINCIPLES AND PRACTICES

TOWARDS RELEVANT DRUG EDUCATION: A Personalized Approach

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As a physician and an educator, I have had the opportunity to participate in several drug education programs in colleges, high schools, and junior high schools and, by trial and error, have developed an approach to discussing drug problems with young people that I feel is effective. In addition, I have observed how various school systems have approached the implementation of this area of education.

I was struck by the large number of schools that have added drug education programs to their curricula without any clear notion of what they want to accomplish and, consequently, without any means of evaluating the programs. There is a vague idea: "We should have one." In this paper we shall examine both the goals and the methods of such programs, and describe in practical terms an approach that has shown some promise in my experience.

Some schools have decided that the primary goal is to eliminate the use of drugs. While this seems to be a desirable and sensible aim, it has led to programs designed to discourage drug use directly by portraying the worst fates that might befall the user. Such scare techniques have produced a very real credibility gap, and the goal of across-the-board abstinence has created more problems than it has solved.

The discussion of marihuana use is an example. A teacher may present the arguments for total abstinence rather strongly to a class in which 10 to 20 percent of the students have already experimented with the drug. The class might feel compelled to confront the teacher with a different set of facts and values—which are often based on personal experience and are well-articulated. The teacher in this impossible position could well fail to be convincing in his efforts to present an alternate viewpoint, and he will have diminished his effectiveness as a source of information and guidance in this area.

While it is exceedingly difficult to determine whether a school program increases or decreases drug use, it is quite possible that a sensational program can cause an increase; the students' reaction is to rebel and show the "Establishment"

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how wrong it is. Recently, I participated in a drug education program in a well-known suburban school system. The high school cancelled all classes and held a day-long drug symposium. A congeries of experts spoke on drugs. No one advocated the use of drugs. Yet, 2 weeks later, two students who had just tried marihuana for the first time told me, "We figured if it was worth calling off classes to talk about drugs for a whole day, it's certainly worth trying."

This kind of experience suggests that the drug education program should be incorporated into the ongoing curriculum, not sensationalized or condensed into a massive one-day session. Unless a believable discussion of drug use and the motivations for it can be conducted in the classroom, it would be far better to have no program at all.

Goals

The goal of a drug education program in the secondary school should be to provide information in such a manner that students can understand the social, medical, moral, and legal implications of drug use in *personal* terms. To accomplish this goal, drug education can be organized into two categories: topical, or concerned with giving information, and dynamic, dealing with decision-making.

There is a significant body of information now available for presentation in a topical manner. The justification for this information-giving approach is twofold: first, the subject of drugs is very much on the minds of students, and second, drug use is a matter of great social, medical, moral, and legal concern in our society at the present time. Therefore, it is a topic that should properly be a matter of discussion in the schools, just as racism, pollution, and violence are valid subjects for inclusion in the curriculum.

The dynamic approach to drug education focuses on how a young person arrives at the decision to use or not use drugs. It requires an examination of the motivational forces and situations that lead students to seek this form of experience over others. And it requires the imparting of a feeling for what drug use would mean in *personal* terms: What would drugs do to me? What would drugs do for me? This is the *critical feature* of the entire effort, because in the last analysis the choice of using drugs or not using them is in the hands of the student. One cannot imagine a form of legal or parental control that would separate young people from the literally hundreds of drugs that can alter their moods and also be of harm.

This presents the greatest challenge to the educator. For, if it is essential for young people to have a feeling for what drug use would mean in personal terms, what form of educational experience will young people accept, short of actual experimentation? The answer to this question is the key to designing a really meaningful educational program. It will be considered in practical terms in our discussion of the design of curriculum materials.

Methods

Setting Up the Program: Who Plans?

Because the school establishment is viewed by many young people as alien to their needs when drugs are discussed, credibility is one sticky problem that arises in the preparation of a program. Many students actually know more than their teachers about drugs and, as noted above, damaging confrontations can occur. My first plea, therefore, is that students have a part in the planning of any drug education program. Because credibility is crucial, student involvement is essential.

The involvement of students at the planning stage will help to avoid another kind of confrontation as well—that which occurs on issues that are peripheral to the ones under discussion. For instance, I have found it best not to get hung up in a discussion which is commonly introduced by the question, "How can you tell me what to do about drugs when you have made such a mess of society with the war, poverty, and so forth?" This question reflects the students' constant effort to shift responsibility away from themselves and onto the older generation. If I accept this shift, much of the credibility that I can offer in discussing drugs is wiped out. I try to counter this by telling them that I agree with their concerns and am personally working to fight against the same injustices that they are attacking. Then I put it back to them: "What are *you* doing to correct the wrongs you see in society?" I then focus on drugs, with comments designed to make it clear that the responsibility for drug-taking does not rest with society in general, but squarely with them. The inclusion of students in the planning of the program can bring this same focus to the program from the beginning.

Setting up the Program: Who Teaches?

The teachers should teach the program. The

current practice of bringing in outside professionals to lecture about drugs in the school is not desirable: it produces an unhealthy degree of sensationalism and it does not provide the continuity and depth that an ongoing program in the curriculum can offer.

However, it will be some time before classroom teachers are adequately trained to field the subject of drugs, which is a complex and continually changing area. Teachers should not be put at the disadvantage of having to carry the entire program unless first-rate source material on the pharmacological, psychological, and legal effects of drugs is available to them. Assembling such materials is a necessary early step in planning a drug education program. Another step is the development of a system whereby the teachers can work with the experts in teacher workshops and in their classrooms, rather than in the assembly hall.

A Way To Get Started

Pre-Test

What do young people know about drugs? It is easy to overestimate or underestimate the students' level of sophistication on this subject, and the teacher must have a realistic notion of the class's knowledge in order either to plan a credible program or to evaluate the program's effectiveness at the conclusion.

One who overestimates the students' knowledge finds that what appeared to be understanding and sophistication was, in fact, the mouthing of rumor, hearsay, and often outright false information about drugs and the laws that control their use. This teacher runs the risk of omitting or treating briefly topics about which the students need real information.

The teacher who underestimates the students' knowledge, on the other hand, risks presenting material that is "old stuff," or talking down to the class, or being too simplistic—any of which can produce the reaction, "We know more than our teacher about this," and severely damage the teacher's role in the program.

The plea here, then, is to check the receiver before transmitting, to determine the level of student expertise and understanding, and to provide a starting-point against which the program can be checked in the evaluation stage.

Questions follow which illustrate the type of pre-test that could be undertaken as a preliminary step. The availability of this type of information, coupled with a sounding of what the students perceive as their educational needs from a drug education program, puts the school in a much stronger position to present material that is pertinent.

Content

The actual content of a drug education program should not be limited to a discussion of marihuana, LSD, amphetamines, and heroin: one should not talk about this group without discussing alcohol and tobacco. This is not simply to afford a comparison between legal and illegal drugs, but also to point out that from a medical viewpoint, excessive alcohol use and cigarette smoking are major public health problems that many feel are a greater threat to young people and their future health than the use—albeit increasing use—of psychedelics, stimulants, and narcotics.

Topical information in the following categories should be provided about each drug:

1. Indications for medical use
2. History of non-prescribed use
3. Physical effects
4. Mental effects
5. Medical and social complications of repeated and excessive use
6. Treatment of drug dependence
7. Data on the relationship of drug use to job and school performance and to crime
8. Relevant laws and their enforcement.

The dynamic discussion of how young people arrive at their decision to use or not to use drugs can start with a class building a list of motivational and social forces such as the ones listed below:

Motivational Forces (Pro and Con)

1. Experimentation
2. Pleasure
3. Aesthetic experience
4. Self-revelation
5. Religious experience
6. Defiance of authority
7. Depression

1. Concern about the immediate physical and emotional effects
2. Concern with the long-term effects
3. Respect for the law
4. Lack of interest in drugs
5. Available alternatives to the drug experience

Social Forces

1. Group pressure
2. Loneliness
3. Family Relationships
4. Friendships

The format for such class discussion is crucial. Education is experience. How can drug experience be discussed without an individual's having the experience? We certainly can't hand out drugs for experimentation in the classroom. And teachers have probably had less experience than students have. The challenge of imparting a feeling for what drug experience would mean in personal terms is what was referred to earlier as the critical feature of the drug education effort.

Summary

In this discussion of current and proposed drug education programs for schools, the following suggestions are made:

1. Articulate at the outset the goals of a drug education program applicable to the school's situation.
2. Evaluate the level of student sophistication about drugs and the expectations the students have for a drug education program.
3. Include students in planning the program.
4. Attempt an honest dissemination of information rather than a moralistic or punitive polemic.
5. Try to include the drug experienced young person in the educational process, either directly or by means of tapes, movies, or case reports.
6. Recognize—and bring the students to recognize—that the ultimate decisions about drug use rest with the students.

This sixth point is basic to the program and crucial for its effectiveness. As I recently said to a high school class:

Meaningful control rests not with the law, the Federal Bureau of Narcotics and Dangerous Drugs, the police; nor is it the ultimate responsibility of your doctor, your parents, or your teachers. The on-the-spot decision of whether or not to take drugs is clearly yours. The drugs go into you. The responsibility is yours. It is with a respect for your good judgment that I detail the effects of these agents. To make a rational choice, you must have respect for yourselves, your mind, your body, and your future.

Pre-Test

(This is a sample of the kinds of questions that can be used.)

Usage: Have you or any of your friends used the following drugs?

	once	*more than once*
marihuana		
LSD (acid)		
amphetamines (diet pills, "speed")		
opiates (heroin, opium)		
sedatives (barbiturates, tranquilizers)		
glue		
alcohol		
cigarettes		

Law: Check the *maximum* federal penalty for illegal possession of marihuana (first offense).

a. none
b. fine only
c. 1 year in prison
d. 10 years in prison

Medical: Check the appropriate column.

	T	*F*	*Don't know*
1. A common cause of death in heroin users is overdose.			
2. Alcohol causes direct damage to the body.			
3. You can become physically dependent on marihuana.			
4. LSD leads to chromosome damage which has been shown to cause leukemia.			
5. Hepatitis is common in drug-using young people.			

Answers:
LAW: d
MEDICAL: 1-T; 2-T; 3-F; 4-F; 5-T

PREVENTIVE EDUCATION: School Policy, Pressures, and Presentation

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The rise in youthful drug use has generated a vast outpouring of legal, medical, and social science literature. However, the amount of writing on preventive education is still relatively slight. Most publications deal with it in a general way, stating broad educational guidelines; some others make very detailed recommendations for classroom or teacher-training curricula; and a few report on programs in operation.

This body of writing is not large enough for us to determine which educational approaches are in fact most prevalent (the number of actual programs undoubtedly greatly exceeds what has been reported), but it is of sufficient size for us to identify some of the key areas of concern to persons in the field. Certain implicit assumptions permeate the drug education literature. These assumptions, because they are implicit, seem to us to conceal issues which, though rarely acknowledged, are of crucial importance.

Drug use is like other academic subjects in that it contains a core of factual information. But there the resemblance ends. For unlike biology, history, and mathematics, drug use involves illegal acts which many students have committed or contemplated. It is a subject which has been widely treated, and sometimes sensationalized, by the popular media. It touches on deeply held moral and political beliefs. And it arouses intense emotions on the part of students, teachers, and parents.

Because of these difficulties, writers on drug education are usually at pains to state some general principles for teaching the subject.

What Information Should Be Included?

In addition to agreement that preventive education should be based on non-scare, non-moralistic principles of honesty and objectivity, there is broad consensus among writers that certain information should be included in a comprehensive program. To summarize:

First, basic pharmacology should be presented. The different types of drugs (cannabis, amphetamines, barbiturates, hallucinogens, and opiates) should be described, along with alcohol, tobacco, and other abusable substances. The functional and recreational uses of drugs should be examined, as well as their physical and psychological effects, both positive and negative.

Second, contemporary patterns of drug use should be discussed, and the social and psychological motivations for drug use should be explored. Students should here be given the chance to discuss the personal meanings drug use has for them.

Third, Federal and State laws regulating the possession and distribution of drugs should be outlined In particular, students should be informed of the consequences of being convicted of violating the law.

Of course, information about drugs is so closely related to moral and social values, that the distinction between fact and opinion is often blurred. Thus, a number of writers emphasize that values

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should be explicitly distinguished from scientific observations, and that a teacher should beware of selectively presenting only facts consonant with his own values.

Some authors note that students are hardly unitary in their attitudes toward drugs and the existing drug laws. Accordingly, the suggestion is frequently made that preventive education programs must be structured to take these differences into account.

When Should Drug Education Begin?

The fact is also noted that patterns of drug use may vary according to a school's geographical locale and the social class of its students. This leads many writers to suggest that drug education must be tailored to each school's student population.

Of all the student characteristics considered relevant to preventive education, age is clearly regarded as the most critical. The prevailing sentiment in the literature is that drug education must begin early, no later than grade school, if it is to have a significant change of shaping youngsters' attitudes in the direction of non-use. Detailed curricula have been published which begin lessons at the fourth grade (4, 12), and at least one program has been initiated at pre-kindergarten level. In her report on this program, Rose Daniels expresses the rationale for early drug education:

> In our school experience, up until the time girls and boys reach 10 or 11 years of age we seem to be able to compete on an equal basis with other influences in their lives in an effort to contribute toward the development of attitudes of personal and social responsibility. Once that age has passed, we find ourselves in the position of having to compete with the closed circuit code of the peer group and with the full impact of the mass media aimed at our young people (5).

The problem of who is in the best position to perform this function—or more plainly, to teach about drugs—is much debated.

Who Should Teach Drug Education?

There is considerable agreement among authorities that a school's regular faculty members, rather than outside experts, should have major responsibility for imparting information to students in a drug education program. (We shall discuss the role of experts momentarily.) Because teacher-student interaction is sustained over a relatively long period of time, a teacher can relate to his students in several ways.

There is some difference of opinion about which teachers of a school's regular faculty, should handle drug education. The subject of drugs has usually been placed, with alcohol and tobacco, in the health education or hygiene course. Others, however, say that because drug use may be viewed from a variety of perspectives, a number of teachers with different academic backgrounds should be involved in a preventive program.

Academic background is not looked upon by everyone as the sole relevant criterion for deciding which faculty members should teach about drugs; a few authorities stress other teacher attributes. For example, in their report on a preventive program in California, J. Thomas Ungerleider and Haskell Bowen observe that most schools have several "approachable" teachers to whom students will talk freely about drugs and other problems. Their report implicitly suggests that such teachers should play a central role in drug education (13).

The issue of teacher selection is complicated by the fact that the information output in the field of drugs has become so enormous that no teacher can easily keep abreast of even a significant part of it. Thus, experts—persons who have special knowledge about the medical, legal, social, or psychological aspects of drug use—are seen by most drug educators as having a part to play in preventive programs. Physicians, lawyers, policemen, behavioral scientists, ex-drug users, and others are defined as important resource persons who can raise teachers' knowledge about drugs to a level sufficient for them, in turn, to instruct students. Conferences, workshops, and in-service training programs have therefore become important mechanisms whereby teachers may interact directly with experts in order to acquire information, discuss teaching methods, clarify school policies in regard to drug users, and so on (6, 9).

Should Outside Experts Be Used in the Classroom?

The second approach to employing experts is to have them transmit their knowledge directly to students, usually in school assemblies or classroom presentation. This procedure, however, may entail certain difficulties. One is the problem of source credibility. Research indicates that students do not treat all experts as equally believable. This problem is compounded by the fact that an expert may be considered truthful but not relevant.

Another difficulty with this approach is that a school interested in a long-term program cannot

rely on the constant presence of outside experts. The prevalent feeling among drug education writers is that a program should not be built exclusively of presentations by experts if it is to be coherent and have continuity over time. Experts may be used selectively, but the responsibility for conducting the program must rest primarily on people regularly affiliated with the school (1).

What Role Should Students Play?

Curiously, the least discussed and perhaps least utilized group of "experts" is found precisely among people regularly affiliated with the school; namely, the students. Many educators remark that students know more than teachers about drugs, but relatively few explore the implication that students should produce and disseminate knowledge under the auspices of a preventive education program, and not merely be assigned the role of a more or less passive audience. Donald Merki, of Texas Woman's University, summarizes the reasons for giving students an active role in drug education:

> Programs concerning drugs and drug abuse at the junior and senior high school level should involve the students in the planning and implementation of the program. This approach has additional values in that it helps bridge the communication gap that exists between adolescents and adults. Furthermore, it provides opportunities for the student to assume some responsibility and it makes use of the peer influence in contributing to the educative process (10).

Programs in which students act as knowledge producers have been reported in California and New York (8, 11), and our own opinion is that over the next few years students will come to play an increasingly active role in drug education. This will occur, we believe, not only because more educators will recognize that students can contribute first-hand information about styles of drug use to preventive programs, but also because of the nation-wide movement among students to press for a greater voice in school policy and curriculum decisions. If this movement continues to accelerate, then ever larger numbers of students will become involved in conducting programs concerning drugs, ecology, sex, and a host of other topics they define as relevant to their educational needs.

What Should School Administrative Policy Be?

Up to this point we have dealt with questions which focus strictly on educational tactics: What should be said in the classroom? How? To whom? By whom? These questions, of course, apply to any subject matter, not only drugs. But because drug use touches on illegal acts, important administrative questions are raised.

Writers who touch on the question of confidentiality discuss it mostly in relation to the student who seeks help with a drug problem. They note that student-teacher communication is not privileged by law, and stress that before a student reveals any potentially damaging information he should be apprised of the school's policy for dealing with admitted drug users (2, 3, 7). The issue of confidentiality goes beyond the special case of the student with a drug problem; they see it as intimately connected to the whole preventive education enterprise.

In any event, it cannot be assumed (as many drug educators seem to do) that the classroom is an insulated milieu, unrelated by practical politics to the rest of the community. We assume, instead, that what is said in the classroom is often reported outside it, and that this may have very real consequences for students. Accordingly, we believe that people who conduct drug education programs must face the issue of confidentiality squarely. They must, at the outset of a program, establish a school policy covering information divulged in the classroom and inform students of what the policy entails. To do any less places students in unnecessary jeopardy.

In like manner, drug educators must formulate explicit administrative guidelines for teachers. It seems to us that a school administration can take one of three positions: (1) it can set strict limits on what a teacher may say, disallowing advocacy of either drug use or a radical change in the law; (2) it can permit the teacher complete freedom of expression, but warn him that he risks the consequences (e.g., loss of employment) if anyone outside the school takes strong exception to what he says; or (3) it can permit the teacher complete freedom of expression and protect the teacher in the event of outside protest. But whichever position the administration elects, the teacher should be apprised of it at the start of the program. Otherwise he, like the student, may be placed in jeopardy.

Beyond this, work should proceed on designing evaluation procedures which would yield data, however incomplete, on the behavioral effects of preventive education. Such work is clearly war-

ranted, as long as no one expects to see in the near future a scientifically validated "cookbook" showing precisely what program elements lead to a reduction of drug use.

Should preventive education be abandoned? Definitely not. We believe that a school is obliged to give its students sound information about drugs. Although a school may not be able to demonstrate the behavioral effects of preventive education, this should in no way deter it from establishing the most sensible program it can. To do any less would be to act irresponsibly toward the young people who look to their teachers for guidance in this difficult area.

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EFFECTIVE DRUG ABUSE EDUCATION: Suggestions for Teachers

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Certainly no single article, pamphlet, book or film can enable teachers to be effective. There is still much to be learned about the problem of drug abuse and particularly about how to be more effective in discouraging it. Establishing an atmosphere conducive to good communication between teacher and students is of basic importance. This article contains some hints that have proven helpful in communicating with youngsters who are thinking about drugs or have already experimented with them. It is intended only as an introduction to some ways in which teachers can strengthen their relationships of trust and understanding with students. By facilitating dialogue and discussion, they are far more likely to positively influence youthful attitudes and behavior than by the lectures and sermons that have all too often marked the crusade against drugs.

Some Concrete Suggestions

Avoid Panic. Teachers are in a particularly good position to encourage parents, students, and the community to remain level-headed about drug abuse.

Drug abuse, like other forms of behavior, may have varying causes. For some, it may represent ill-advised experimentation; for others it may indicate serious psychological problems. If a teacher has reason to believe that one of his students is experiencing serious emotional difficulties, consultation should be sought with the school counselor and a conference arranged with the parents with a view to obtaining professional help for the youngster. Some types of behavior that may be associated with serious problems include: loss of interest in school and in social relationships with others, marked alteration in behavior, sudden deterioration in personal appearance, and the development of problems in dealing with school and parents. Since the reasons for drug use vary widely, so must the approaches to individual students.

While the teacher can play a role in referring suspected problems to the proper authorities, a panic reaction expressed either to the student or to a parent can serve only to alienate the student further and to confuse what should be straightforward, objective, and professional action if the student needs help.

Keep Lines of Communication Open. Encouraging an atmosphere in which the student feels free to confide in parents and teachers and to discuss his concerns is an important first step. Obviously, the size of present classes often makes personal contact difficult. At the same time, if the student realizes that his parents and teachers are making a genuine effort to understand his point of view, this realization is likely to help him in the process of growing up. Although it's sometimes difficult, it's important to avoid being moralistic and judgmental in talking about drugs and drug users.

Many adults, including teachers, feel uncomfortable and defensive about discussing drugs with teenagers. This is sometimes due to an awareness of their own inconsistencies in the use of such everyday substances as tobacco and alcohol. Nevertheless, there are good and convincing arguments against the use of drugs which can be stated in terms that are persuasive to youth. For example, some teen-agers see the use of drugs as one way of developing heightened self-awareness or of enhancing their inner freedom. Pointing out the difficulty of achieving these goals if they become drug-dependent may help them realize the fallacy of this viewpoint. Similarly, if young people are to improve the society of which they are critical, they can only do so by remaining a part of it rather than by chemically "copping out."

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Avoid "Scare" Techniques. Use of sensational accounts or scare techniques in trying to discourage drug experimentation is usually ineffective because the teen-ager's direct knowledge frequently contradicts them. Teen-agers are demanding—and are entitled to—honest and accurate answers. Given the facts, youngsters often quickly respond. The apparent decline in LSD usage, for example, is believed to be related to the well-publicized reports of possible adverse psychological and potential biological hazards.

It is impossible to eliminate or legislate away all possible substances of abuse. The individual decides for himself whether to use or not to use drugs. To be effective, prevention must ultimately be based on each student's decision not to use drugs because they are incompatible with his personal goals. Emphasizing that no authority, whether school official or police officer, can make that decision for him may help the youngster clarify his personal responsibility. It may also help to reduce the adolescent tendency to view drug abuse as an act of rebellion.

Because the abuse of drugs frequently carries with it heavy legal penalties, it is important that youngsters be aware of the possible long-term results of their behavior. While this should not be the primary emphasis, the legal and social implications over a lifetime should be indicated as two of the essential factors to be taken into consideration in any decision to use or not use drugs. Some young people, feeling keenly that certain drug laws are unjust, advocate violating them. Thoughtful discussion of the implications of such violation and of whether the use of drugs is sufficiently important to them to justify such extreme measures may be helpful.

Avoid Creating an Atmosphere of Distrust and Suspicion. Like many parents, some teachers, anxious to discourage drug abuse, are likely to assume that *any* departure from the preferred styles and customs of the majority is indicative of drug abuse. Youngsters who have tried or are using drugs come in all sizes and shapes—with short as well as long hair, and conventional clothes as well as eccentric dress. So do those who don't use drugs.

By equating unconventional appearance with drug abuse, we may encourage the very behavior we're trying to avoid. At a minimum, the youngster is likely to feel that the conventional world is completely opposed to any originality or creativity that does not fit a common mold and that the price of acceptance is complete conformity. While his external appearance may conform to the norm, there is no assurance that drug abuse will not become his private mode of rebellion.

Since the problem of teen-age drug abuse embraces a wider range of substances than those prohibited by law, even an attitude of active suspicion and continuous surveillance, were that possible, would not eliminate the problem. It would, however, almost certainly destroy the climate of trust and confidence essential to the intergenerational communication that is desirable in preventing abuse.

Avoid Drug Stereotypes. Many of us, when we think about the drug misuser, immediately think of some more or less vague stereotype of "the addict." Similarly, we often tend to think of all the misused drugs as being generally alike. Nothing could be further from the truth. Present evidence suggests that the vast majority of youngsters who experiment with marihuana, the most popular illegal drug of abuse, do so on a onetime, experimental basis.

Drugs differ widely in their chemical composition and, more important, perhaps, in their effects—depending upon the personality of the user and the circumstances of use. The person who misuses drugs may vary from the onetime user experimenting out of curiosity to the chronic, heavy user who is psychologically dependent on a drug. While some types of drug misuse may be fairly apparent even to the untrained observer, other types may be so subtle as to escape the detection of even the expert.

Although some drug users go on to the use of more potent types of drugs, many others do not. Just why some users become dependent on particular drugs and others do not is not very clearly understood. It may be related to personality development, but physiological factors may also play a role. While a physical dependency on the drug plays some role, psychological dependence appears to be more important. Physical dependence on heroin, for example, can be cured in a relatively short time; yet the heroin addict has a very difficult time avoiding using the drug again upon discharge from treatment.

Be Well-Informed Yourself About Drugs. Much information is available about the drug problem—some of it accurate and useful. But unfortunately much of what is published tends to be overdramatized and frequently inaccurate.

Much of the controversy over the effects of marihuana and its control, for example, results from overinterpretation or misinterpretation of what data are presently available. Drug-use advocates frequently use the scarcity of scientifically reliable information as a basis for arguing that marihuana and other drugs are harmless The absence of complete agreement based on reliable evidence that a substance is harmful does not, of course, demonstrate its harmlessness. Often, relatively long-term use of a substance is required before its public health implications are apparent. Cigarette smoking provides an obvious and apt example. While American experience with marihuana is of relatively short duration, foreign research studies, though often difficult to interpret, suggest that long-term use of marihuana may be detrimental to the health of the users.

A discussion of the implications of various social policies regarding marihuana and public health is one approach that may enable you to reach your students. The social problems of adding another intoxicant of unknown long-range implications to our present difficulties with alcohol may be the subject of profitable discussion. Another topic which might stimulate good discussions among intelligent youngsters and their teachers is the problem of allowing a harmful drug to become popular and then subsequently making it illegal. It might also be productive to discuss some of the originally unsuspected deleterious effects of drugs, such as the birth defects resulting from use of Thalidomide.

Use Drug Education Materials as a Springboard to Discussion. Even good films, pamphlets, and other materials need to be made personally relevant to students. This can usually be done best through discussion. As teachers skilled in classroom discussion are well aware, much of the art of effective discussion requires that the teacher be a thoughtful and responsive listener as well as a catalyst.

The arguments (often heated) of the student who advocates use of drugs deserve a hearing and, when appropriate, a considered rebuttal. Often a teen-ager's apparent conviction masks considerable uncertainty about the worth of his arguments, which are frequently offered to test their validity and/or the honesty of the teacher. Summarily rejecting the advocate's points may alter his classroom verbal behavior but it is unlikely to change his thinking. The most probable result of an arbitray "put down" will be to convince the younster that adult objections to drug use are merely prejudices.

A student-run discussion on prevention of drug abuse may be even more effective. Teen-agers are frequently far more responsive to the mores and values of their own group than they are to the values of the adult world. Former drug abusers can often be highly effective in communicating with a student group—they can "tell it like it is!"

Use by teachers and parents of alcohol and tobacco is of more than casual interest to teen-agers—all too often this is the thrust of their argument in favor of marihuana. In addition, the problem of compulsive overeating may be discussed as similar to drug dependence. Habits, such as smoking and drinking and even compulsive overeating, can readily serve to illustrate the highly persistent nature of habitual behavior despite strong rational grounds for change.

As adults we can also serve to demonstrate that it is possible to live an involved, truly meaningful life without the use of chemical substances to add meaning or excitement. The adult who is himself "turned on" by life without recourse to drugs is one of the best advertisements for that type of life.

Alternatives to Drug Use

Youngsters who find satisfaction in other activities are less likely to find *regular* use of drugs appealing. Aware of this, the teacher may open up for individual or classroom discussion ways in which students are or can become involved in activities that have personal meaning for them.

Many young people, while attempting to appear blasé or uninvolved, feel keenly the problems of our contemporary world, and opportunities for active involvement, such as work with a political party, or a program for slum children, might be encouraged. While a strong interest in other activities may not deter a student from experimenting with drugs, he is less likely to adopt habitual drug use if he feels "turned on" by shared and constructive human experiences.

Adolescence is a lonely time for many youngsters. The teen-ager who is unable to find his place in some orthodox group sometimes turns to drug use as a means of finding a kind of group acceptance. The student who is isolated from others or having more than the usual difficulties in gaining acceptance will sometimes respond very well to a special interest shown by one of his teachers. Even when

the teacher is unable to solve a problem, he may serve as a necessary bridge in helping the student get assistance from some specialized professional source. Particularly for the student with a poor home situation, a sympathetic teacher can provide a model of an understanding adult who has no need to escape into a state of drugged unreality.

Wherever possible, discussions of drug abuse should be integrated into the general curriculum rather than limited to a specific drug abuse unit or lecture.

THE SOCIAL SEMINAR: Drugs, Education, and Society

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The task of finding effective and workable ways of dealing with the problem of drug abuse today faces many people in the community, but none more so than the teacher and school administrator.

For them, the call to "do something" to prevent drug abuse among youths often has led to the response, "What?"

For instance:

—Mrs. B. teaches 120 health education students. She wants to incorporate a course in drug education, but she is unsure of what approach to take with these high school students. A law enforcement lecture? Distribute fact sheets? Rap sessions? Talks by ex-addicts?

—Mr. T. is a high school counselor who is becoming more involved with drug and drug-related problems. At what point should he feel obliged to call in law enforcement officials to crack down on drug use? Should he be a "buddy" to the students and risk an involvement he may not be able to handle, or should he be more of a disciplinarian? He's unsure of his own attitudes toward drug abuse, and knows this unsureness will add to the confusion of the students.

—Mr. C. is a school administrator who is baffled by the deluge of programs offered to the school as "drug education" packages for teachers. If he tries to implement one and it fails, he must answer to the parents. If he doesn't do anything, he will be criticized, too. How does he choose a drug education program that will reach the students and be supported by the teachers and parents?

The National Institute of Mental Health considered these problems and needs when it developed "The Social Seminar: Education, Drugs and Society," in cooperation with the U.S. Office of Education. The Social Seminar is an innovative teacher and school administrator training program dealing with information and attitudes about today's society, today's students and their lifestyles and problems, and today's drug culture.

Teachers need to understand the social and cultural phenomena which trouble many of today's youth, and be sensitive to the pressures and anxieties of adolescence. Teachers and administrators should help to create a school environment which is relevant to the students' needs and aspirations. Teachers need to be well informed about what drugs are, how they are used and abused, and the possible causes for the drug problem. And perhaps most important of all, teachers must understand their own attitudes toward drug abuse and drug abusers before they can make any meaningful contributions in curbing the abuse of drugs.

The core of The Social Seminar consists of a multi-media package including 15 special films, a discussion guide for each film designed to encourage and facilitate participant interaction, an introductory orientation film, and a booklet of general guidelines for conducting The Social Seminar. Also included in the package is a programmed text covering factual and pharmacological information relating to drugs, for those persons who need more basic data in the drug abuse field. The Social Seminar is completed with a role-playing simulation game, "Community at the Crossroads."

The philosophy around which The Social Seminar was developed is basically this—"If you have knowledge about drugs, and an understanding of young people and their cultures, then you can effectively interact and communicate to prevent drug abuse." The Social Seminar does not provide pat answers; there is no single, best, or simplistic approach to drug abuse education. Rather, it attempts to reorient people to better cope with drug abuse problems. It is designed to give teachers,

and anyone else who deals with young people, an opportunity to examine the human, social, and cultural issues surrounding the problem of drug abuse. This will enable teachers to open up the kind of dialogue and discussion that is a prime requisite for influencing youth attitudes and behavior.

How To Use The Social Seminar

The Social Seminar is a flexible and adaptable program which can be shaped to meet specialized local needs, and which will continue to be useful even as the drug abuse scene continues to change. It is designed for in-service teacher training, college, and educational television use. Although some of the materials may be deemed useful with various groups of students, The Social Seminar was *not* designed for classroom use.

It should also be kept in mind that, because drug abuse is a total community problem, not just a school problem, The Social Seminar can also be used effectively as an adult education program for a community.

Some beginning suggestions for use of The Social Seminar are:

1. As the basis for a full semester's college course for would-be teachers. For instance, it has been suggested as a course of 18 three-hour sessions for credit.

2. As an in-service teacher training program within a school system, or within one school. The Social Seminar easily adapts itself to in-service training for credit toward recertification. Depending on the needs of a particular school system and its resources, The Social Seminar could be presented during the school year, after school, for two- and three-hour sessions weekly. It could also be presented at summer workshops of one or two weeks duration.

3. As the beginning of a community-based drug education program. Since The Social Seminar has broad social and health relevance, it is also possible to consider using it as a part of existing health and mental health education courses, or in numerous other ways. Use of The Social Seminar in one setting will undoubtedly give rise to further innovative ideas and beneficial uses.

Group discussion following each film in The Social Seminar is an indispensable ingredient. From discussion evolves clearer understanding of the complexities of the drug scene and of one's own real feelings about these issues, as well as further creative methods of utilizing The Social Seminar. It is recommended that students also should be invited to participate, along with teachers and other educators; they will add considerably to a "realistic" discussion. For the same reason, it is also recommended that whenever possible parents, clergymen, law enforcement officials, lawyers, psychologists and others participate in the entire program.

Training To Use The Social Seminar

Effective utilization of The Social Seminar requires skilled leadership, particularly in connection with the group discussions from which much of the benefit of the Seminar will evolve. There are undoubtedly many individuals throughout the country who are equipped to intelligently conduct The Social Seminar with a minimum of training. These are people who have a broad understanding of group dynamics and who understand the problems of effective communication.

NIMH is also developing training programs for people interested in using The Social Seminar, who will, in turn, become resource people for further training in their own home areas. In some instances, training programs also are being initiated by State personnel.

Elements Of The Social Seminar

I. The Social Seminar Brief Description Film (7 min., color):

An overview explaining the nature, philosophy, and approach of The Social Seminar.

II. Guidelines for Presenting the Social Seminar.

General suggestions, based on pre-test experiences with The Social Seminar, are included in a master guide for the person who will lead the Seminar. It includes directions for discussion of all films, and recommended sequence of presentation.

III. The 15 Core Films:

None of the films in The Social Seminar is meant to be used alone, and all need to be followed by discussion. Each film serves as a springboard for participant interaction. All films utilize the *cinema verité* technique, that is, they are films of real people, in real situations—with no actors or staging. The first 9 films (from "Changing" to "Brian at Seventeen") depict drug use and drug related events in a variety of social and cultural settings. In viewing and discussing these films, the partici-

pants are inspired to examine their own values, attitudes, and prejudices. This self-examination and the accompanying questions which will be raised set the stage for the second half of The Social Seminar films (from "Jordan Paul" to "Meeting"). These films, along with accompanying activities, attempt to offer possible methods through which teachers, schools, parents, and communities can seek solutions.

A. "Changing" (30 min., color)

A young family seeks to create an alternate life-style; one which is for them more open, spontaneous, and honest, and includes beards, beads, and pot. It shows the mother and father coping with the changing relationships which their new life has brought about—with their children, friends, employer, and each other. Finally, it shows them coping with their children's potential involvement with drugs and their own "double standard."

B. "The Family" (30 min., B&W)

A great deal of what a teacher should know and feel about his students can be gained through deeper understanding of how a family group functions. This family, like all families, has numerous identifiable traits, needs, tactics, and reactions. The "down-time" relaxed interactions, and potential conflict situations get equal time.

C. "News Story" (30 min., color)

A study in objectivity and creativity. How a story makes its way to the television screen—the problems of research, filming, editing, and presentation, and how these affect the objectivity and credibility of the final story. This process is shown for discussion to aid the teacher in developing discrimination in dealing with the flood of information about drug use and the drug culture.

D. Youth Culture Series (Four segments, 15 min., color)

Some of the experiences and lifestyles of American youth, typical and atypical, are shown. It is a personal view of their worlds, the pressures of their peer groups, and the values and lifestyles of each person. The films reveal the positive and negative effects drugs have had on their lives, and emphasize some of the habits and hangups in the everyday activities of youth.

1. "Guy": a young Chicano whose use of drugs is the product of an unrewarding environment.

2. "Bunny": a college junior who could be "the girl next door." Drugs are just one aspect of her life.

3. "Tom": a young man who has allowed hallucinogenic drugs to become his total life experience.

4. "Teddy": a young black American who refuses to use drugs and who has found positive alternatives to drug use.

E. "Drugs and Beyond" (30 min., color)

In the not-so-distant future, decisions concerning the use and/or abuse of drugs for "positive" purposes—such as increased learning power, memory stimulation, accelerated maturing processes, and tension control—will become major responsibilities among educators and administrators. A look into this future offers a perspective on the entire question of drug education. It suggests that everyone must begin to deal with ideas about manipulation and alteration of man's "natural" state of being and the consequences of such experimenting.

F. "Brian at Seventeen" (30 min., B&W)

This film presents an adolescent's view of his educational needs and how school is and isn't fulfilling them. Brian gives his perspective of the educational experience, his parents, and life in general. This is a study of an adolescent especially for the teacher or parent who finds the current scene confusing. Brian adds to the confusion, but while doing so, also adds a great deal of understanding.

G. "Jordan Paul: One Teacher's Approach" (30 min., B&W)

A high school health educator chooses involvement with students as his way of becoming a first-class teacher. Involvement causes problems, to be sure, but for Jordan Paul it is the ultimate reward of his profession. The film shows Paul in action in the classroom, on the campus, on field trips, problem-solving with his peers, students, and family. The film seems to say that life is a single whole, including that aspect of life which is labeled drug abuse.

H. "What Is Teaching? What is Learning?" (30 min., color)

A group of teachers discuss their first year's experience in the "open classroom." Flashbacks illustrate the conversation. The enthusiasm of both teachers and pupils is infectious—so much so that the viewer has the feeling of becoming

an active participant in the processes of learning, of change, and of growth.

I. "Mr. Elder's Class: Drug Education at the Elementary Level" (30 min., color)

An elementary teacher uses the subject of drugs to build a more effective learning relationship with his class—then shares his own learning with his peers. His aim is not to present drugs as a separate course, but to use the subject as a theme around which he may change his teaching methods and become more open.

J. "Drug Talk: Some Current Drug Programs" (30 min., color)

There are many ways to begin constructing a drug education program in the schools, and all of them are strewn with boulders. This film illustrates some of the potential toe-stubbers: the police lecturer, the ex-addict, the youth organizer, the "rap room." "Drug Talk" is a fine reminder of some educational "don'ts": don't preach, frighten, or simplify; and don't expect too much too soon with too little.

K. "Understanding: A New Institution" (6 min., B&W) (Optional)

When new institutions evolve to meet complex problems, confusion may develop. Drug abuse is a complex problem requiring a multiplicity of solutions, no one of which is all-encompassing. This film is about one approach—a youth "drop-in" center and opinions on its success and failure for the community. (NOTE: This film, part of another discussion series which is also available from NIMH, can be used at this point).

L. "Community in Quest" (30 min., color)

A generational gap is slowly closed in a small therapeutic group while, on the political stage across town, the townspeople act out their fears of drugs and banish the group from the community. For many, perhaps most, communities this film mirrors life as the forces of change come into conflict with traditional values and the threat of the unknown.

M. "Meeting" (30 min., B&W)

How does a community pool its available resources for a drug prevention program? This film depicts the stumbling blocks to honest communication which prevent effective collaborations.

IV. The Film Discussion Guides:

One measure of the effectiveness of a film as a teaching tool is the amount of discussion it evokes. The Discussion Guides which accompany each film are important tools in facilitating group response.

V. The Programmed Text—"What Will Happen If?: An Introduction to Drugs and Their Effects":

Many teachers and adults are reluctant to participate in workshops or discussion groups about drug abuse because of their lack of knowledge about drugs. By starting with the self-study programmed text, teachers and adults can gain a firm base of knowledge about drugs, their derivations, and their effects on the body and the central nervous system.

VI. "Community at the Crossroads"—A Drug Education Simulation Game:

This is an activity which, through the technique of role-playing, will intimately and emotionally involve participants in trying to define what direction a town called Cummington ("Anywhere U.S.A.") will take in response to its drug problem.

A. The Leader's Guide: Preparatory information to facilitate the simulated role-playing activities of the participants.

B. Player's Manual: Sets the stage and provides background information for each participant.

C. Role Descriptions: Each participant will have a role description outlining his attitude and response towards the "drug problem" in Cummington.

D. The Clergyman's Report, The Police Chief's Report, The Budget Report: The plot thickens.

How To Obtain The Social Seminar

The films and discussion guides will be available for free loan from State lending facilities. (See Appendix .)

The films and discussion guides will be available for rental or purchase from:

NIMH Drug Abuse Film Collection
National Audiovisual Center (GSA)
Washington, D.C. 20409

Purchase Price: $974.50 (Includes 15 films and companion discussion guides)

Rental Price: $185.00 (Includes 15 films and companion discussion guides)

Single copies of the discussion guides will be included in each film can. Additional copies must be purchased from the above address.

For a copy of the Programmed Text write to:
Programmed Text
Post Office Box 1635
Rockville, Maryland 20850

For a copy of the Simulation Program write to:
Simulation Program
Post Office Box 2305
Rockville, Maryland 20852

EARLY CLASSROOM UN-CONDITIONING: A Rehearsal For Non-Drug Behavior

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There are classroom activities that can help students examine ways to live that significantly reduce the need for nonmedical drugs. These activities, it seems to me, have become more important as an ever increasing number of youth turn to drugs to solve life's problems. The model of instruction that I will discuss is designed to help students identify and practice alternatives to drug use.

The value of medical drugs has been well established, and yet drugs have been a mixed blessing. Drugs keep people alive, they reduce pain, fight disease, control overpopulation, provide relaxation, and so forth. But the rapid acceptance of drugs has left us with many problems. For example, the arthritic patient who uses aspirin to mask the symptom may forget to exercise and cause the disorder to advance rapidly. In this case a drug that helps to reduce pain indirectly leads to the further deterioration of the patient.

Misuse of drugs by both adults and physicians is easy to cite. A teething child develops a slight but unsightly rash on her cheeks and although it does not seem to bother the child the parents seek medical advice. A cortisone ointment is prescribed, the rash disappears, only to reappear again several days later. A second physician discontinues the ointment and suggests the use of nonprescription lanoline in order to keep moisture off the childs face at night. The cause of the rash is checked by the mild, harmless emollient. The stronger more dangerous drug was unnecessary.

Our youth also misuse drugs. The reasons are many. To list but a few—the misuse may be based on ignorance, defiance, naivete curiosity, excitement and peer pressure. Often misuse occurs because youth have been raised to have unquestioning faith in drugs and because the young person has no alternate solution. One student might find it hard to say "no" to his friend, another person may have no other way to relax. Education must deal with these problems if it is to be successful in its drug programs.

Ignorance, curiosity and trust may all have been present last year when nearly 2,000 young people at rock concert took pills that had been freely passed among the group. They did not ask the content of the pills, nor did they check on the source of the pills. Few questioned the pills' potential effects—many became ill.

In Marin county some boys put marihuana and water in a jar and let it ferment for two weeks. They then syphoned off the fermented juice and injected it intravenously. The youth seemed to have no idea of what had happened to them when they became seriously ill and were hospitalized. The newspapers charged that marihuana was the major culprit and ignored the fact that two boys did not know that the juice of any leaf fermented and any nonmedical injection can be dangerous.

Forming Attitudes Toward Drugs

Let's consider how our youth have come to this uncritical attitude toward drugs. The typical 12-year-old today has had injections for illness, tetanus/diphtheria, smallpox, T.B., and allergies. He has ingested, without question, many prescribed oral pills—both drugs and vitamins—he has experienced television and radio commercials that offer drugs as a panacea, and he has witnessed his parents and friends using drugs.

One night our typical 12-year-old has trouble going to sleep and complains loudly. His mother goes to the medicine chest, gets an aspirin and a glass of water. The 12-year-old is told "here is

Excerpted with permission of the author from talk entitled "Life Without Drugs" made at San Francisco Conference of drug abuse project. October 1968.

something to make you feel better" and later he falls asleep.

What bothers me in this example is not that the child may be beginning to see a drug as an answer to a sleeping problem, but that the child did not learn a more natural way to fall asleep. If there had not been a drug available the mother may have rubbed the boy's back and tried to soothe him, or she might have discussed with him what was bothering him. If the boy was willing to talk about a problem, some solution might have been reached. She might also have suggested to him that he try other devices to fall asleep, for example "counting sheep," or using pleasant thoughts to overcome unpleasant thoughts. These might have been the activities in a "Life Without Drugs."

Our 12-year-old boy may never learn some of the alternative approaches that can help him to fall asleep. To neglect this area in a classroom discussion on the barbiturates will leave the 12-year-old without the skills to deal with future problems of sleeplessness.

Affecting Drug-related Attitudes

In order to help our youth examine and deal with their attitudes toward drugs we need to consider each of the component parts of any attitude: (1) cognition, (2) affect, and (3) behavior. Cognition represents our beliefs, information, facts, etc. Affect means the feelings that we associate with an attitude such as warm, hostile, neutral, ecstatic, etc. Our behavior is the action that we take as a part of our attitude.

Now what can we do in the classroom to affect the various components of the attitudes surrounding drugs? Our traditional emphasis has been on the cognitive level. We provide information and allow discussion around the nature of the dilemma of drugs and their use. Accurate and objective information is an essential element.

If we are effective teachers we probably also impart some affective signals. If we, for instance, show some displeasure with the use of drugs as a primary method of going to sleep, we may convey an unpleasant feeling to the student around the thought of using drugs in this way. Students who identify with you and model your behavior will accept not just the knowledge about drugs, but also the feelings that you have.

In the example of the student who uses drugs to sleep, however, new knowledge and negative feelings about the use of drugs are not enough to help him. The action or behavioral aspect of the attitude has been left untouched. The student still does not have the alternate behavior needed to substitute for the use of drugs.

Practicing Alternatives in the Classroom

Once we have identified a given problem concerning drug use, and we have explored the cognitive aspects, we must involve the behavior of the student if we are to be sure he can act on his new information. The average fourth grade class in a few minutes can give us most of the reasons why students turn to drugs. It is not necessary to provide a lecture on this part of the problem. One of the frequent reasons offered will be that students cannot say "no" when their buddy asks them to do it. The knowledge that this occurs is not sufficient preparation for the student who wants to resist. The student will both need to understand alternate ways of responding as well as have some practice in the experience of saying 'no'. The student must become involved in the problem of saying no to his friend and experience actual situations within the classroom where this activity can occur.

In short, there are two things that can be done in the classroom that generally have not been done. The students can examine alternate behaviors, as in the case with the boy who must learn how to sleep without the use of drugs. The students must also be allowed to enter into activities where they can practice the behavior that they have discussed. This means that the teacher will use modeling behavior, rehearsal, role playing, and other activities designed to assist the student in the action he will take outside the classroom.

Imagine what would happen if a football team just sat around, if the coach only lectured them and instilled team spirit, and then sent them out on the playing field without actually practicing the game. They would be confused and defeated. That is exactly what happens to students when we have prepared them only in the cognitive aspects of drug use. The students need realistic experiences in a "Life Without Drugs" if they are to be able to make choices in drug use.

ALTERNATIVES TO DRUG USE: A Model of Causes and Mandates

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I don't want to downgrade the real value of accurate information about drug effects--it can be a significant help in decision-making processes. Further, it may serve to bolster the intuition that drugs are harmful and may help justify socially taking a non-chemical route. Educational honesty and credibility must be maximized, in the same way that legislators should make drug use a public health, not criminal, action. But the real promise in education would be to involve educating about alternatives. There is no higher priority and there is no other way to make such a powerful impact minimizing drug-use patterns.

It is my contention that education about non-chemical alternatives for each level of experience is the best "prevention." It is also the method of choice for moderate experimenters. And finally, the Alternatives Model is the treatment of choice for heavy users (here much stress would be put on the alternative of not using). In the application of the Alternatives Model, it must be realized that there is no one pat alternative for everyone, just as there is no one motive responsible for all drug use. Also, it should be noted that the alternatives of best application are those which are *incompatible* with being high. For example, "listening to recorded music" is not an alternative unless it precludes being stoned while listening. In this particular case, techniques or ways of listening must be sufficiently taught so that chemically-altered awareness gets in the way of the experience. In general, extremely *passive* alternatives must be utilized with a bit more care than alternatives necessitating *action* or work with one's resources. The more active and demanding alternatives most clearly interfere with a drug-taking style.

An Alternatives Model emphasizes causes: and mandates increased attention to the development and communication of alternative attitudes, strategies, techniques, institutional changes and life styles which could diminish the desire for using drugs in order to attain legitimate personal aspirations. "Alternative" is *not* just a synonym for "substitute" since it implies an orientation which is *more effective* than drugs for giving the person real satisfaction.

Once we presume that "alternatives" are important, we must expand the model to fit complex variables in all phases of the drug scene. We face questions like: "Which alternative for which drug?" "Which alternative for which motive?" "Which alternative for which person?" At this point, I wish to share a list of categories which has assisted me in thinking about applying alternatives. It was obvious to me that motives and relevant alternatives were intimately connected, and that one way of conceptualizing it was in terms of different "levels of experience." Thus, as an illustration rather than an ultimate formulation, I have included TABLE I. Each level of experience pertains to certain types of motives leading to drug use or experimentation, examples of which are listed in the Table. Across from each level-motive category are examples of types of alternatives which might replace, ameliorate or prevent drug abuse. I expect the reader will come up with many more motives and an almost infinite addition of alternatives. Of course, there are other ways to conceptualize the different kinds of alternatives—again, this is intended only to serve as an example and stimulation. Needless to say, several levels of experience may operate within a particular individual or subgroup, so categories and motives may be related across levels and should not be taken as mutually exclusive.

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Implementation of Alternatives

To give one small specific instance in which the Alternatives Model may be applied to institutional action, let us take the case of the public schools. It has been argued that many of our public school systems, through rigidity, misassessed priorities and lack of relevance, have contributed to the dissatisfactions which lead children toward drugs. It seems indisputable that the "Art of Living" has become a critically important skill for young people, one not reflected in course curricula. The schools have become expert at transmitting information and training intellectual skills, but this is partially lost if the young are preoccupied and are not motivated to learn what the schools want them to learn.

The issue of educational reform is far too broad to treat in this paper, but let us offer one small suggestion based on the Alternatives Model. Most schools offer course experiences in non-intellective areas, but emasculate anti-chemical possibilities by assigning grades to such courses. I am referring to subjects like music, art, homemaking, drama, physical education, manual training, family life education, etc. All of these subject areas *could* pertain to the motive levels discussed above. They *could* get children so personally involved that drugs would not be so inviting. Usually they do not. The arbitrary grading process infuses anxiety and competition into just those areas that might provide creative relief. Students deliberately avoid electives in alternatives areas for fear of lowering their academic average. Only the best students in the non-intellective area are really encouraged to go on developing non-intellective resources, and even they are prey to "evaluation anxiety"—that fear of failure which makes neurotics out of prospective artists.

Abolition of grades in alternatives subjects could be a powerful stroke in turning kids on to a "natural high," with little if any monetary outflow. Parents might object to a lack of competitive evaluation, but they should be reminded that one of the lures of the drug scene is that no one gets an "F" for turning on. Logically related steps could include the expansion of subject-hours in alternatives areas, invitations to community members who could share what turns them on non-chemically, time outside the walls to taste social involvement and service, a philosophical admission of the importance of interpersonal as well as intellectual skills, etc.

There is one alternative not mentioned in the Table because it is so obvious. Yet it deserves some comment. A growingly viable alternative to using drugs is *not using drugs* or *discontinuing drug use.*

Perhaps the most exciting aspect of the Alternatives Model is that it can be applied to any level of action or reaction to drug use. It is limited only by the imagination and wisdom of the thinker. The positive possibilities seem limitless; while obsession on drug-related symptoms and dangers appears an endless pit of futility.

There are other advantages to the Alternatives Model. Application of provided alternatives to drugs simultaneously provides alternatives to other forms of human difficulties. After all, truly effective solutions to the "problem of drugs" are the effective solutions to the problem of "people" and "life." Very possibly, deterioration may be shifted to harmony. Those solutions, applied to every level of experience, should make man's abuse of himself and others fade into an historical remembrance of a thankfully transcended cultural psychosis.

TABLE ONE

LEVEL OF EXPERIENCE	CORRESPONDING MOTIVES (Examples)	POSSIBLE ALTERNATIVES (Examples)
PHYSICAL	Desire for physical satisfaction, physical relaxation, relief from sickness, desire for more energy, maintenance of physical dependency	Athletics, dance, exercise, hiking, diet, health training, carpentry or outdoor work
SENSORY	Desire to stimulate sight, sound, touch, taste; need for sensual-sexual stimuation; desire to magnify sensorium	Sensory awareness training, sky diving, experiencing sensory beauty of nature
EMOTIONAL	Relief from psychological pain, attempt to solve personal perplexities, relief from bad mood, escape from anxiety, desire for emotional insight, liberation of feeling, emotional relaxation	Competent individual counseling, well-run group therapy, instruction in psychology of personal development
INTERPERSONAL	To gain peer acceptance, to break through interpersonal barriers, to "communicate," especially non-verbally, defiance of authority figures, cement two person relationships, relaxation of interpersonal inhibition, solve interpersonal hangups	Expertly managed sensitivity and encounter groups, well-run group therapy, instruction in social customs, confidence training, social-interpersonal counseling, emphasis on assisting others in distress via education
SOCIAL (Including Socio-Cultural and Environmental)	To promote social change, to find identifiable subculture, to tune out intolerable environmental conditions, e.g., poverty, changing the awareness of the "masses"	Social service, community action in positive social change, helping the poor, aged, infirm, young, tutoring handicapped, ecology action
POLITICAL	To promote political change, to identify with anti-establishment subgroup, to change drug legislation, out of desperation with social-political order, to gain wealth or affluence or power	Political service, political action non-partisan projects such as ecological lobbying, field work with politicans and public officials
INTELLECTUAL	To escape mental boredom, out of intellectual curiosity, to solve cognitive problems, to gain new understanding in the world of ideas, to study better, to research one's own awareness, for science	Intellectual excitement through reading, through discussion, creative games and puzzles, self-hypnosis, training in concentration, synectics—training in intellectual breakthroughs, memory training
CREATIVE-AESTHETIC	To improve creativity in the arts, to enhance enjoyment of art already produced, e.g., music, to enjoy imaginative mental productions	Non-graded instruction in producing and/or appreciating art, music, drama, crafts, handiwork, cooking, sewing, gardening, writing, singing, etc.
PHILOSOPHICAL	To discover meaningful values, to grasp the nature of the universe, to find meaning in life, to help establish personal identity, to organize a belief structure	Discussions, seminars, courses in the meaning of life; study of ethics, morality, the nature of reality; relevant philosophical literature; guided exploration of value systems
SPIRITUAL-MYSTICAL	To transcend orthodox religion, to develop spiritual insights, to reach higher levels of consciousness, to have Divine Visions, to communicate with God, to augment yogic practices, to get a spiritual shortcut, to attain enlightenment, to attain spiritual powers	Exposure to non-chemical methods of spiritual development, study of world religions, introduction to applied mysticism, meditation, yogic techniques

USE OF DRUG FILMS: Which, When, and How

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Users of LSD say that the quality of a trip depends on several factors. One is the grade of acid taken. Another is dosage—a fledgling will almost certainly fly on 250 micrograms while the same amount may barely get a hardened tripster off the ground. Two other essential factors are the "set" and the "setting."

Set means the ideas, the mood, the rationales a user carries with him into the experience. If he is fearful, antagonistic before he begins his trip, he is likely to have a bummer.

Or, if the setting is wrong—unpleasant physical surroundings, bad vibrations from those around him, distracting noises or lights or music—even a positive set can be negated.

The use of drug films to educate young people about dangers of drugs can be compared with the use of LSD.

Criteria for Film Selection

First, the quality of films, as of drugs, varies widely. Many films still in circulation have lost their potency through age. Hats, hems, automobiles, outmoded slang, may distract from and vitiate the message, no matter how timeless. Or, a film which is up-to-date visually may be hopelessly marred by jingoistic phrases and atavistic attitudes. "Know your dealer," they say in the streets. Applied to films, this translates to know something about the producers of films whose use is contemplated and, if at all possible, sample the dose in advance by previewing them before an audience that will not be harmed if the film is bad.

In addition to quality, drug abuse films vary in type. Some take the sociological approach, warning against the loss of income, status, dignity, even freedom (if jailed) attendant upon addiction. Some are purely descriptive of drugs and their effects. Some show in great detail the ways drugs can be abused. Some maintain a studiously determined distance. Some are dramatizations, some documentaries, some lectures, some cinematic essays. Most are a combination.

Some project a tone of moral outrage, others a tone of cool scientific detachment. Some attempt to deal with a broad spectrum of drugs—these are fewest in number and probably the most needed—others treat only one drug or one class of drugs. Needless to say, none of these films will give audiences identical trips.

It might be worthwhile to ponder in advance what functions a film should perform:

For example, is one purpose of a drug film to show teenagers how heroin is prepared and injected, how marihuana is smoked, how glue is inhaled—so that they can recognize and avoid these situations when encountered? Should a film be propaganda, supplying the moral element to the classroom's dispassionate discussions?

Should a film, because it lists a lot of doctors as consultants, be considered unimpeachable authority? Or should it be questioned, and if necessary demolished, in the presence of its audience? As set down, of course, these are loaded questions. Unfortunately, most drug films are similarly loaded.

The next consideration in selecting a drug abuse film, to continue our LSD metaphor, should be the set. What's the mood and character of the audience? Obviously, rural junior high school students will find little to identify with in a film about big-city junkies. Nor will ghetto blacks do

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much but cackle at the cinematic drug despair of an affluent, blond, sports-car-driving Kampus-King protagonist. Only through careful assessment of the set of an audience can a film user hope to turn it on meaningfully.

Finally, the setting must be such that the trip will be good, not bad. Most drug film audiences are captive. They can't question the film about obscure points, they can't argue with it (though they can catcall and mutter). If their boredom threshold is breached, they nod off.

Guidelines for Film Use

Guides to the use of films are difficult to set forth because each teacher and teaching situation is different. However, there are some basic rules that if followed improve chances of success.

A good rule to start with is to be as wary of films as of drugs. Some precautions to be kept in mind are: Don't trust a film to be good just because someone says it is: no one film is good for every situation . . . Don't trust even a good film to contain only accurate information . . . Don't trust one expert: consult several.

If possible, preview a film before ordering it. That failing, request delivery several days in advance of the scheduled showing in order to view it, preferably with a few teachers or students whose opinions and reactions will be helpful.

Do not hestitate to use only portions instead of complete films, filmstrips, or tapes. Imaginative teachers have put together excellent shows by combining parts of several films.

Before a showing, check equipment to be sure it is mechanically and optically satisfactory. Ideally, back-up projectors and sound equipment should be on hand in case of an equipment breakdown. If there is a breakdown and no back-up, it is usually better to postpone the presentation entirely than to interrupt it for a lengthy repair job.

Room arrangements should be checked to assure sufficient darkness and satisfactory viewing from all seats. Materials should be racked and ready so that the film showing can start immediately after the introduction. If something intervenes between the introduction and the showing, the meeting should be brought back into the proper setting by a reintroduction.

Generally, no film should be used for educational purposes without oral introduction or explanation. The introducer can tell the purpose of the film showing, reasons for selecting the film, what to look for in it, what questions or reactions will be discussed after the showing.

Ample discussion time should be scheduled to follow film showings. The discussion period may contribute more to the desired objectives than the film showing.

Nothing should be permitted to interrupt a film showing. Unless latecomers can enter without distracting the audience, the entrance door should be barred.

Where practical, audiences should be kept small. A large group can be separated into sub-groups if necessary. In intimate groups, comments and criticisms come more freely, and there is opportunity to correct errors, misunderstandings, and inaccurate inferences.

Some think that, for teaching purposes, all films should be shown twice, with a discussion period in the middle and perhaps another one following. It is a possibility to be considered.

EVALUATION IN DRUG EDUCATION: Methods and Results

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The purpose of this paper is to make suggestions that may help to move drug education evaluation forward a few notches. Perhaps the most useful approach to the current state of evaluation of formal drug education at the secondary level is to summarize the methods and results of several completed studies, with a discussion of the main points of interest.

Although a number of evaluations are in progress, few have been completed to the point where they are available in the traditional published outlets. Three unpublished California studies have been located (California State Department of Education, 1968, 1969, 1970; Geis, 1969; Coronado Unified School District, 1971) and one published report on a study of a private school in the Northeast (Swisher and Crawford, 1971). Even these few, however, demonstrate numerous issues of importance for consideration in future studies.

I. Boyle Heights Narcotics Education Experiment

Boyle Heights in Los Angeles is a predominantly Mexican-American depressed area and at the time of the study had a high incidence of arrests. As part of a larger project sponsored by the Office of Economic Opportunity, two junior high schools in the Boyle Heights section were used in an experiment in classroom instruction and teacher training by four ex-heroin addicts from the local area (Geis, 1969).

In many respects, the study is a model of evaluation research design since it employed before- and after-tests, control schools, and a specific educational innovation. Two schools in a nearby area were included in the design as control schools. Both experimental and control schools conducted units of narcotics education, and students in both sets of schools were at approximately the same level of knowledge and attitudes before the experiment began. (Drug use *per se* was not measured either before or afterward.)

The major result was that the experimental schools were strikingly higher in drug knowledge than the control schools at the end of the instruction period. This happened despite the fact that the unit on narcotics was only slightly expanded in the experimental program. The students in the experimental schools also improved significantly on a number of attitude items measuring caution in drug use and demonstrated desirable differentiation of concepts on drugs and drug users. Thus, the statistical findings supported the educational success of the project. Students interviewed at a later period mentioned the ex-addicts as the most worthwhile part of the unit. And teachers rated the ex-addicts as one of the better aspects of the special training they had taken.

The project was not a uniform success, however, and this fact could not have been learned through the formal findings. Observations built into the plan provided insights perhaps of greater importance than those described above. There was, for example, some mutual distrust and lack of communication between teachers and ex-addicts. Despite this deterrent, most teachers came to have a more sympathetic view of addicts, an important outcome in itself. Another potential hazard was noted by one observer who said he thought some students may have admired the ex-addicts too much. Since the ex-addicts could project an image of "cool" young adults in the prestigeful role of teacher, it is possible that some children made an association between drug use and an attractive life

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style. Research designed to explore this question would be valuable and interesting.

The most successful feature of the ex-addicts' participation, for both teachers and students, was their accounts of their own addictive histories. The students asked many questions that revealed their awareness of drug use in the community and their concern over its personal aspects. They were curious about parents' reactions and about the effect of family members' drug use on them as children. Girls asked about drug use in connection with pregnancy and childbirth. It seemed obvious that the students were highly motivated to learn in this context. Undoubtedly, the ex-addicts lent credibility to this subject that few teachers could match.

Two plans that met with failure in the project were a series of Saturday symposia for students and evening classes for parents. Both were dropped because of poor attendance. The experience with parents also suffered from the inability of the ex-addicts to get beyond some firmly held attitudes of the parents.

Some tentative conclusions can be drawn from this study. Ex-addicts appear to stimulate interest and apparently facilitate learning. (This may be especially true among those who can identify with them.) But they may also create organizational problems that have to be dealt with if such an innovation is to be integrated permanently into the curriculum. The investigators of the Boyle Heights study were wise to include informal observations in their scheme, instead of relying completely on rigorous measuring devices and statistical tests. It is these insights that sometimes move understanding ahead in giant steps.

II. California State Department Of Education Study

The evaluation set out to answer a number of questions, among them one large and difficult one: Can drug abuse education help to reduce drug use? It is an important and pressing question and it also represents a philosophy of drug control.

Programs had been newly introduced into a number of California school districts in 1968–69 and 18 schools had consented to be evaluated. Eleven were junior or senior high school programs, and those formed the basis of the report. Before-and-after drug use, attitudes toward drugs and quality of knowledge were measured about a month apart. It was found that during that month attitudes and knowledge improved, as expected. But drug use itself did not decline in any of the 11 districts, and in four there were statistically significant increases in some types of drug use.

Drug education apparently did not lower drug use, and this was an unexpected result. Fortunately, it was not a "black box" study. The design was not based solely upon an assumption that a stimulus (the educational program) enters a box-like organism (the student) and elicits an automatic response (stops drug use). Other findings on the characteristics of student drug users, students' opinions about and reactions to the various programs, their reasons for using and not using drugs, and the relation between drug knowledge and drug use, all provided grist for future drug education planning. Before turning to those findings, some perspective is needed on the one unexpected result.

Should evaluation results expect to show less drug use?

The design of an evaluation of drug education ideally should include measures of drug use, when it is possible to do so.* Too often, however, the inquiry is made in terms of having "ever used" one or more illegal drugs. Greater precision in measurement of this criterion is important. The dimensions that can be tapped include frequency of use, regularity of use, recency (e.g., whether used currently), and extent of dependence. With these details, changes in prevalence, rather than in incidence alone, can be assessed. This provides a more accurate picture of the population currently at risk.

What if current drug use is found the same or even greater after exposure to a drug education program? Before drawing the conclusion that the effort is futile, the following points should be made:

1. Not all educators agree that decrease in drug use *per se* should be in the primary goal of drug education. Some in the light of the present "epidemic" feel that a *slowing of the increase* is an improvement. Too, a change in the *pattern* of use, for example, from "hard" to "soft" drugs, may be encouraging. Still others feel that the development of healthier attitudes toward drugs or inculcation of decision-making skills are more realistic goals. Given this lack of consensus on primary

*Occasionally, schools will not permit surveys of drug use to be conducted out of fear of adverse publicity or concern about confidentiality of results.

objectives, drug use itself need not stand as the only criterion of success or failure of a program.

2. Drug education should not be expected in a short period to reverse a trend that has been gathering momentum for years. Those forces may still be strong enough to soften or neutralize the best-planned education effort. It would be naive to expect struggling new education projects to make heavy inroads on this problem so soon. Yet responsible educators cannot leave such an important body of facts to the peer group or the street.

3. A third point to remember is that the effects of education may be long-range and invisible for a long time. Programs may have a delayed effect on behavior that cannot be adequately measured except through perserverance. Longitudinal studies can cast some light on this process; hopefully, some courageous and patient evaluators will carry out studies of this kind.

A negative finding on drug use *per se* need not spell the doom of a program or a philosophy.

Other findings with program implications

Before- and after-tests of criteria are not the only source of insights into the educational process. Below are additional findings from the California study that can shed light on current practices or stimulate thinking in new directions.

The students in the California study provided valuable facts in response to questions about teaching methods. Both drug users and non-users chose ex-drug users and doctors as their preferences for resource persons. This confirmed a similar finding from a Michigan study in 1968 (Bogg, 1969). The remaining preferences, in order, were: the police, teachers, and other students. The students also had preferences for types of instruction. The discussion method was their first choice, followed by the visual media, research, and listening. The reaction to films was not flattering to the films shown, indicating that some students, instead of being persuaded against drug use by the films, were actually made more curious about using drugs. Although students' opinions of methods should not be accepted unreservedly as the "best," these findings are a reminder that the target group in drug education is fairly sophisticated and critical about the subject matter.

One question of special interest to social psychologists is the relation between knowledge and behavior. Do people with superior knowledge usually act on that basis? In the California study drug users' scores were in the middle range while non-users' scores fell at both the high and low ends of the scale. That means that some non-users did have the best knowledge, but use of drugs does not necessarily imply poor knowledge. Other studies report a picture of a different sort, indicating that many drug users, or those with pro-drug attitudes, also have superior knowledge. At the least it can be said that there is no simple relationship among knowledge, attitudes, and use.

III. Pennsylvania Pre-Post Study Of Use, Attitudes, And Knowledge

With a design similar to that employed in the Statewide California study, a study was made of four grades in a private school in Pennsylvania. Again, the anticipated results of drug education were not realized in this short-term program of 4 weeks. Knowledge increased, but attitudes were slightly more pro-drug afterward than before.

IV. Coronado Values–Oriented Drug Abuse Program

A new approach to preventive drug education was introduced into the Coronado, California Schools in 1968 and has now had the benefit of before- and after-testing of drug use and attitudes from senior high down to the fourth grade, over a relatively long period (Carney, 1971). The data are voluminous and the findings more complex than in the foregoing studies, but results appear to be more favorable. This study also had, for most grades, the advantage of control groups who had no value-oriented education, for comparison with the experimental classes. The author Carney drew the following conclusions:

> The largest effects are found for males, at the earlier ages . . . Actual frequency of drug use and more dangerous behaviors tend to be less in experimental values classes than in control groups.
>
> In the absence of the drug abuse program, groups from grades 7 through 12 tend to move in attitudes toward a "drug culture" pattern and to increase their use of alcohol and marihuana.

A study as extensive and detailed as this one may suffer from inability of others to understand and apply the findings as easily as in simpler examples. Nevertheless, the inclusion of early grades, the control classes, and the length of period of testing

make for confidence that those findings do reflect program impact.

One might have the impression from the foregoing discussion that evaluation research is the only or best source of insight on questions about effective drug education. On the contrary, other types of research designed to shed light generally on the problem, particularly sociological or psychological studies, can provide many hypotheses.

One example of fruitful findings from one-time survey research is in the contrasts found between 8th and 11th grade in an earlier study of Coronado. (Coronado Unified School District, 1970).

This was evidenced by more significant differences between users and non-users in the 8th than in the 11th grade. Although the differences lay in the same *direction* in both grades, 8th grade drug users appeared to be *less* conforming to school and parental expectations, and to be *more* attentive to peers' approval and suggestion. The findings suggested that the younger users were exhibiting a kind of shallow social precocity. These results suggest that drug abuse education aimed at users may be more difficult in the 8th grade than in the 11th, if early drug experimenters are more daring and intractable than later experimenters, requiring different approaches from those used in 11th grade. This is merely an hypothesis, but illustrates the use that can be made of survey findings.

Conclusions

Since evaluation of drug education is hardly born, no definite conclusions can be drawn until more studies have been reported. Based on the few already completed, these suggestions can be offered:

1. A variety of criteria or measures of effectiveness in addition to the obvious one of lower drug use should be considered in the evaluation. Attitudes and knowledge are important outcomes too. Also, "system" variables such as flexibility, harmony, and the like should be considered as they may affect program survival and allow long-term effects to occur.

2. Stay as close as possible to the ideal controlled experiment, but be willing to compromise if it is the only way to obtain data. Comparative data on grade levels, program elements, types of schools, and the like, can be informative.

3. Be willing to study characteristics of the program and its context that will give it life in the report. Make those findings available and understandable to interested persons.

A collection of well-conducted studies in this area may assure education of a tested specialty that can survive its adolescence.

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HOW TO PLAN A DRUG ABUSE EDUCATION WORKSHOP

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Introduction

How to teach primary and secondary students about the dangers of drugs and abuse is a problem plaguing educators. Most realize that the simple expedient of reaching for an all-purpose speaker, film or pamphlet is not the answer. Programs and techniques capable of effectively influencing young people must be attuned to the complexities and anomalies that characterize today's youth scene.

Approaches to drug education must be as varied as the numerous and diverse causes that motivate varying types of students to turn to drugs. Some of the common motivations are: peer pressure or influence; status search; rebellion against parents; revolt against the world and its institutions; boredom; curiosity; dislike of schools or teachers; myths about drugs.

Drug education may be taught in connection with health education, social studies, history or other disciplines or several of them simultaneously. Starting in elementary grades, focus on prevention, is advisable. Above the primary level, programs aimed at intervention may be required. At all grades, a factual, nonmoralizing presentation is essential. Skills in communicating with youth are also essential, as are systems and schedules of evaluating programs to monitor their effects and results.

The element of over-riding importance in drug education is the teacher. His role is not merely that of a conduit of knowledge. He must, in addition, personify an active force in molding student actions and beliefs. Honesty and integrity that will gain student respect, ability to recognize and respond to student problems, and needs, and to show care and concern—these are the prerequisites for a successful mentor in the drug abuse education field.

Directors charged with conducting inservice training to guide teachers in presenting effective drug education have a difficult task. These guidelines will, it is hoped, help in the endeavors of workshop directors. However, it is strongly urged that all workshop directors attend an inservice workshop before conducting their own. Experience in and observation of the precepts and suggestions presented in the following pages will make them easier to understand and to apply.

Philosophies Of Drug Abuse Education

In planning inservice teacher workshops that have as their objective effective drug abuse education in primary and secondary schools, here are some concepts to be considered:

1. Effective drug education should take into consideration that we live in a drug-using society. People look to drugs to alleviate a host of physiological, psychological and social discomforts, with varying degrees of success. Young people brought up on television have been told that pills reduce anxiety and tension, provide buffers for everyday living, perform other near miracles. There is a relationship between the advertisements of tranquilizers to face daily living, liquor for celebration, and the use of marihuana at a rock concert.
2. Some young people of all income levels adopt the theory that using marihuana is not vastly different from the use of alcohol, tobacco or pills. Educational efforts that do not cover the entire spectrum of drugs, including tobacco and alcohol, strike students as examples of adult hypocrisy and deafen young ears. On the other hand, good response has been reported to education that gives the facts about drugs, and distinguishes between drug use, misuse and abuse.

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3. Young people, in relation to drugs, can be categorized as (1) those who will not abuse drugs or can easily be prevented from doing so, (2) experimenters, (3) abusers. Just where the emphasis should be in education about drugs depends on the age of the students and the situation in a particular school.

4. Surveys show that motivations for drug abuse among the young are varied and frequently complex. Among them are: peer influence, desire for kicks, escape from feelings of inferiority, relief from routine lives, easing of pain from adolescent problems. To many young people, the old-time rituals of religion, country, family and school have lost their appeal—and drugs, astrology, youth subculture, are among the substitutes. Educational emphasis should be on ways of coping with youths' problems rather than on picturing drug users as "depraved" individuals, which has proved to be ineffectual.

5. Untruths, exaggeration, sensationalism and moralizing kill the effectiveness of drug education. If 20% of the students in a classroom of 50 have used a drug, there are at least ten students carefully measuring the teacher's words against empirical knowledge. At least 30 students will know the ten as users and be briefed by them. With 40 of the audience of 50 in good position to judge the accuracy of a teacher's statments about a drug he probably never has tried, any discrepancies will be quickly noted and used to breed distrust of the total presentation.

6. Some drug use in school presumably stems from disaffection with the educational process. An interview with one student illustrates this. Asked, "Do many kids go to school stoned?" the student's reply was "yes." The next question was, "Doesn't this impair your efficiency in school?" The answer, "Of course." After that, "Well, why do you do it?" His answer was, "I wouldn't be able to stand school any other way." This student's problems were not drugs per se, but an unfavorable home-school environment.

7. An "all school" program is no way to conduct drug education. The normal rules of school are suspended, all classes stop, students assemble, people are invited from the community, and one or two films—often sensational or lurid and more likely to breed drug use than to suppress it—are shown. This "why it's dangerous to use drugs" approach is likely to make many teenagers feel that if they haven't tried drugs they're missing something.

8. Young people delight in pointing out the inconsistencies, and hypocrisies in drug legislation and enforcement, and while they should be informed of the penalties of drug possession and use, nothing is to be gained from trying to defend the inconsistencies of drug legislation. The fact that court records can jeopardize careers in teaching, medicine, law and government may have some effect on college students. However with most youths, threats make no impression. They argue that the adult community commits legal transgressions, why shouldn't we?

9. In distinguishing between drug use and abuse, a useful definition for educators is that abuse occurs when a drug is used in such a manner as to interfere with community-accepted standards of economic, social, psychological or physical well-being. It is important to recognize that all substitutes have abuse potential—salt, sugar, aspirin, marihuana, whatever.

10. The basic deterrents to drug use are evidently not directly connected with drugs. Among them are: Interest and participation in school programs; alternatives to drug use offered in the home and community; areawide to nationwide actions on issues in which youth are concerned. Youth's need to be involved in the current scene starting at the primary school level must be recognized by educators, who can cite evidence that drug abuse can be highly detrimental to the individual as well as destructive to public welfare and advancement. If in addition drug abuse education moves toward encouraging communication between young people and adults, it can accomplish more.

Objectives Of Inservice Training For Drug Abuse Education

Before plans are made for inservice training programs, it is wise to determine objectives which in turn will help determine program content. Here are some guidelines for selecting objectives.

A. Objectives for school administrators (those who cannot attend may also profit if given reports by educators who do attend):
   1. Transmittal of general information about drug problems in the nation, locality, community, school.
   2. Briefings on national, State and local laws, and other legal aspects.
   3. Provision of information and evaluation of programs in other school districts to combat drug abuse.
   4. Development or promotion of programs to combat local drug abuse.
   5. Gaining support for school/district drug abuse programs.

B. Objectives for teachers enrolled in inservice training (all of the objectives cannot be achieved in a single conference):
   1. Changes in teachers' knowledge, insights, attitudes, skills.
      a. Increased knowledge on drugs—pharmacological, psychosocial, or legal—or all three.
      b. Ability to discriminate between fact and fiction regarding drugs.
      c. Ability to recognize personality problems related to drug abuse.
      d. Ability to evaluate written and audiovisual materials about drugs.
      e. Development of increased skill in encouraging wise decision-making.
      f. Increased awareness of the nature of the youthful subculture and an accumulation of subconscious knowledge to assist in verbal and non-verbal communication skills.
      g. A valid aspect of inservice training would be to encourage teachers to evaluate their own competence as drug educators, and to decide whether, because of their personal convictions, they might do a greater service to students by not assuming the role of drug mentor.
   2. Changes in teachers' relationships with their students:
      a. Development of more sympathetic attitudes towards youth, with increased understanding of the stresses and problems they face, and increased ability to propose rewarding alternatives to drug use.
      b. Development of ability to show caring and concern for students who feel deprived of parental or other love.
      c. Ability to convey drug information to students—pharmacological, psychosocial, legal—or all three.
      d. Increased ability to communicate with students and to develop communicative skills.
      e. Ability to contribute to students' sense of personal work and integrity.
      f. Development of students' decision-making abilities.
      g. Strengthening student skills in evaluating such influences as commercial ads, news reports, novels, dramas.
      h. Development of student sensitivity to the feelings of others.

C. Objectives of inservice training in terms of parent and community relations.
   1. To increase public and parental awareness of the nature and scope of drug abuse in the local community.
   2. To increase public and parental understanding of the tangible as well as intangible factors that contribute to drug abuse by youth.
   3. To help teachers work with parents of drug abusers.
   4. To demonstrate by the conduct of inservice training the serious concern of the school in drug education for youth, and the need for parental and community cooperation.

Orientation Program

Inservice training is often preceded by an orientation program to enlist school or school district support for such training. The orientation program may take several forms.

1. Length and timing

   Orientation sessions for the faculty of a school or school district can range from one-hour after-school programs to an all-day program or two afternoon sessions of two or three hours each, preferably on consecutive days.

   Orientation programs for parents and the general community, in addition to the school or school district personnel, would consist of one or more one-to-two-hour sessions and focus on general presentation of the drug abuse dilemma rather than on the contents of a specific inservice training program.

2. The director

The orientation program director is usually the same person who serves as inservice training director. He (or she) should have supervisory status to get the necessary attention and cooperation, working knowledge of the drug field and its literature, and the ability to locate and enlist experts as program leaders and consultants.

3. The invitees

Faculty including counselors and nurses, school board members, administrators, supervisors and PTA officers might be invited. For a community orientation program, efforts should be made to have not only parents but community leaders such as the mayor, legislators, judges, police officers and physicians, attend.

It is recommended that students be included in the audiences of orientation programs. Preferably, known or suspected drug users as well as non-users should be represented. Their attendance will add to the credibility and validity of the programs and their critiques, if truthful, can provide valuable guidance for future activities.

4. Program content

The content of an orientation program will depend upon the objectives, the time allotted, the availability of speakers, the possibility of including audience-participation activities, and other locally varying circumstances. Usually, orientation programs attempt to give a general briefing on the local drug problem and a preview of the forthcoming inservice training program.

5. Orientation speakers, discussion leaders, consultants

Speakers and discussion leaders for orientation sessions are in reach of most schools. The section, "Selection of Inservice Speakers, Discussion Leaders, Consultants," on page 97, presents a comprehensive list of sources from which orientation speakers can be selected. Invited guests are most likely to attend orientation programs if the speakers and the organizations they represent are known and respected in the community.

Planning and Conducting An Inservice Training Workshop Or Conference

1. *Scheduling and timing*

Inservice training can be scheduled in either continuous or interrupted programs. *Continuous programming*, which is the preferred, occupies a full weekend, week or longer span of uninterrupted time. Probably the most practical is a two-to-seven day intensive workshop or conference for teachers from one school or one district. Summer is an excellent time to hold such a workshop if the teachers to be reached can allocate the time.

An *interrupted program* consists of a series of interspersed meetings, each from one to eight or so hours long. Some possibilities are: alternate Saturdays, certain days or evenings of consecutive weeks.

Continuous Workshops

Advantages of continuous workshops are:

The concentrated approach facilitates producing attitudinal changes in teachers regarding their students and their relationships with them. The reason: attitudes are most readily changed in connection with strong emotions, which are usually experienced only in sessions longer than those possible in interrupted programming.

Continuous programs isolate participants from extraneous matters, permit uninterrupted attention.

Relationships and comparisons between speakers and other program events are more clearly seen in continuous programming than when time lapses between events.

Interaction between participants is facilitated, particularly if all are housed in one location.

Continuous programming permits more flexibility in length and size of sessions and in introducing innovative and experimental techniques.

Time can be utilized more efficiently since the initial physical and psychological adjustments need take place only once, and the atmosphere is more likely to be friendly, informal, comfortable, and conducive to learning.

Communication and sharing of experiences between participants are easier.

Disadvantages of continuous workshops are:

that only a comparatively small number can usually be accommodated and in view of time

pressures, difficulties in obtaining teacher substitutes, and financial problems, it is difficult to find one time span convenient even to a small number of teachers.

Interrupted Programming

Advantages of interrupted programs are:

They are less expensive.

They are easier to program, as free time such as weekends, holidays and faculty days can be utilized.

Such programming permits homework or reading assignments.

Participants may keep their professional obligations with the least interruption of time and necessity of providing substitutes. A wider range of participants are therefore attracted.

Participants may select those sessions they wish to attend, if professional commitments preclude continuous attendance.

Interrupted programming is more likely to attract school or district administrators and others who can attend individual but not prolonged programs.

It is easier to schedule outside experts since they are given a wider choice of dates.

Disadvantages of interrupted programs are:

Field trips are difficult to fit in.

Some kinds of programs are difficult to schedule as, for example, those that must be presented in connection with others to give balance.

Changes in attitudes or emotions are difficult to achieve in interrupted programming.

Some general suggestions on timing of inservice training are:

As much advance notice as possible should be given to potential participants. For a continuous program, several months would not be too far in advance.

Most program directors avoid scheduling programs during examination and registration periods and on holidays and days of such events as elections and important sports or school events. However, for some purposes and participants, programming on such days may be suitable. It is often well to consult the convention schedules of organizations to which workshop participants belong in order to avoid conflicts; although here, too, inservice training may sometimes be scheduled in connection with conventions and may utilize some of the same speakers and program leaders.

For continuous programs, accommodations may be more available and lower-priced at certain times of the year.

2. *Workshop locations*

One- or two-hour programs can be held in temporarily vacant facilities such as school rooms, auditoriums, government facilities, or churches. For overnight or longer programs, ideally a facility should be sought which is not part of the daily routine of the participants. A motel outside the city, a mental or youth hospital or treatment center, or other facility in which the participants will be isolated from their ordinary surroundings and can devote their undivided attention, provide desirable settings.

The inservice training director

Attributes helpful to a workshop or conference include:

a. Interest and some knowledge in the drug field, realization that there are complex underlying issues, and desire to deepen and broaden his own perspectives. If a director does not grow in personal understanding through conducting a workshop, it is unlikely that he will add substantially to the growth and knowledge of the participants.

b. Wisdom in adolescent problems and psychology. Effective workshops not only transmit information on drugs and drug abuse, but survey the forces within society and the educational system that contribute to drug problems.

c. Evaluative ability. A director must be able to evaluate written and audiovisual material to rout out false or biased information.

d. Contacts with youth. A workshop director must be able to turn to students to get information on their attitudes, informational levels, life styles. He must be able to consult students freely and frequently—including non-users, suspected users, and school drop-outs.

e. Respect of teachers. Inservice directors must themselves be able to understand and respond to inservice trainees in order to help them increase their ability to communicate with students.

f. Related knowledge that will be helpful

includes general information on runaways, underachievement, protest movements, sexual behavior and general juvenile delinquency.

g. The director should possess sufficient authority to get things done, have adequate financing, and be relieved of the majority of other obligations in order to concentrate on the workshop program.

4. *Inservice training participants*

Since inservice formats vary from weekend retreats to auditorium lectures, no one optimum number of participants for all varieties can be set. As a rule, workshops targetted to intensive learning experiences and involving living accommodations for several nights or longer do not have more than 30 participants. A larger number is likely to be too cumbersome and impersonal to effect personal changes. On the other hand, a smaller number reduces opportunities for interaction and intercommunication and increases the cost per participant.

Participants should represent the several disciplines most likely to be involved in drug education—health education, science, social studies, nurses, etc., as well as school administration and guidance counseling. In the interests of facilitating integrated approaches in a school or school district, it is helpful to include teachers in grades from elementary through high school. However, since the education directed to primary and secondary school students will differ, separate sessions or programs may be necessary to cover different material for varying age groups.

Administrators and supervisors should be urged to send their best-qualified personnel. This is easiest done if the inservice workshop sounds important, and has the prestige afforded by well-qualified speakers and program leaders. Participants should be those considered to have good rapport with students. Not only will they be the most effective in influencing youth after the training, they will be able to contribute to the workshop the student point of view.

Inservice training for a specific target will, of course, have a specific audience. For example, a preventive program aimed at students who have not begun to experiment with drugs would be primarily directed to elementary grade teachers. Training that has the integration of teaching and referral services as its goal would have a broader focus—joining teachers with school counselors, nurses and psychologists.

Efforts should be made to assure that attendance is motivated by real concern with youth rather than by curiosity, desire for prestige, or similar motives. Open-minded individuals, as opposed to those known to have fixed or hostile positions, would preferably be selected except where inservice training might change an attitude or where an individual is included as a foil demonstrating the disadvantage of inflexibility.

Participants should agree to remain through the entire training period, barring emergencies, and to attend all sessions.

5. *Program content*

The title or theme of an inservice workshop will help determine its framework and should be chosen with more than cursory thought. Such phrases as "Leadership Training for Drug Abuse Education" have specific implications that should be fulfilled. On the other hand, if a title includes the phrase "drug abuse," this should not close the gate to a discussion of drug use.

Within its time limitations, general inservice training should cover as broad a base as possible. Teachers need a good store of knowledge to hold their own with the free-thinking, curious young people most apt to turn to drugs. Ill-prepared teachers may only turn student doubt and distrust of adults into alienation.

If all of the aspects of drug education cannot be covered in a training course, the principal categories can at least be enumerated to the participants. A respectably complete list would include:

a. Brief history of drugs and drug use.
b. Pharmacology of drugs including alcohol and tobacco: effects, addictive qualities.
c. Psychosocial aspects: personalities predisposed to drugs; society's stake in drugs; characteristics of the drug subculture; value systems; moral implications; true and false notions about drugs; youth alienation and protest; counseling services.
d. Legal aspects: local and Federal drug law enforcement; judiciary, parole and probation; possible changes in laws; how

to counsel apprehended youngsters.

e. Research: latest findings on effects and side-effects of drugs or lack of them; statistics; future prognostications.
f. Student views on drugs vs. community views.
g. Financial aspects.
h. Drugs in religious or mystical experiences.
i. Alternatives to turning on with drugs.

In all of the above, alternate viewpoints should receive honest consideration. Diametric "good" and "bad" approaches are not helpful in drug education.

Intelligent and sophisticated students can often give good advice on program content and should be consulted.

Instructional methods used in inservice training will include both the standard techniques of, say, an English literature course and experiential group dynamics methods such as the Amherst approach in which students are given reading material presenting divergent opinions. Under a trained, well-versed teacher, discussion is held analyzing the conflicting opinions and discrepancies. If conclusions cannot be reached, students are assigned to obtain additional data and the process repeated until conclusions are forthcoming. Other experiential exercises are listed in the section on group process activities.

6. *Selection of inservice speakers, discussion leaders, consultants*

Within the limitations of budget and time, the director will want to expose inservice trainees to the widest possible range of speakers and other program leaders in terms of disciplines, attitudes and opinions. This does not mean presenting a miscellanea. Every speaker's philosophy or point of view should be known and reflected upon in advance. All speakers and events should contribute to the over-all purpose and theme, should be the best choice for the purpose, and should be placed on the program in the order most effective for the total plan and pattern.

Locating qualified resource persons requires considerable time and effort. In most cases it will be by consulting large numbers of people and references and by asking many questions that the right programming decisions will be made. Given for example the alternatives of an anesthesiologist who is chairman of a county medical society and a general practitioner, a workshop director might choose the first—unless he found out by investigation that the practitioner had done clinical research on use of drugs and was sought after by young people as a medical authority and confidant.

Spokesmen should be selected not for the authoritative positions they hold but for the authoritative information they can communicate. What is wanted is not hearsay or opinion based on vested interest or personal bias but a statement of position founded on firsthand experience, research, or observation. Individuals in eminent positions whose rank is due to administrative ability rather than specialized knowledge may not be suitable for such assignments. That is, an executive who is required to be a spokesman for his institution and to reflect favorable light on it may not be as good a choice as his special assistant who is expert in a particular field.

Another precaution to be noted is that a balanced program does not mean a simple yes-and-no format, unless the intention is to use conflict to spark discussion. Little is to be gained from a program consisting of one articulate person arguing for legalization of marihuana and another arguing against it. An example of a better format would be, assuming no immediate change in the marihuana laws, to examine from various viewpoints the positions of students who hold that marihuana laws are inequitable and therefore should be violated.

Where can one begin to look for program participants? One might start with activities in the community that deal with drug abuse—a halfway house, local research project, or drug clinic. Those in touch with drug users might be queried, such as operators of cafes and meeting places frequented by students as well as disc jockeys, ministers and other adults who relate to youth. Opinions of students—users, non-users and if possible drop-outs, should surely be sought. Educators who have conducted workshops report that their suggestions are often excellent.

Additional sources, and some of the types of individuals to be considered for workshop leadership, include:

a. Colleges and universities: departments of

psychology, pharmacology, sociology, anthropology, medical schools, law schools, teachers colleges.

b. Mental health units and societies; public health agencies; other health organizations.
c. Physicians; psychiatrists.
d. Police and law enforcement officers who relate to the community scene.
e. Juvenile courts; juvenile detention centers; prison administrators.
f. Student leaders of school and church organizations.
g. Teachers conducting successful drug programs.
h. YMCA, Boy Scout and other youth organization leaders.
i. Social welfare organizations; child guidance centers; hospital personnel.
j. Press representatives; editors of underground papers.
k. Musicians popular with student groups.
l. VISTA and Job Corps staffs; the managers of runaway location centers found in some localities.
m. Ex-addicts; ex-alcoholics.

A factor to be kept in mind is that drug abuse is a controversial subject and some of the speakers at a workshop on drugs are likely to be controversial too. School or district administrators sponsoring inservice training should be prepared to provide protection and defense for workshop directors in case of complaints about speakers and panelists who may be displeasing to some citizens.

7. *Arrangements with workshop speakers, program leaders, consultants*

In making arrangements with inservice training speakers and program leaders, the director should make clear the purpose and general content of the conference or workshop, the size and make-up of the audience, the topic and scope the speaker is expected to cover, the period of time allotted and, in the case of a panel member, the range to be covered and the names and affiliations of the other panelists. Similarly, the speaker should be asked to confirm his understanding of the arrangements. Details on which agreement should be reached include:

a. Money. It should be clearly stated when a speaker is invited whether he will receive a fee or honorarium, whether travel and other expenses will be reimbursed, and to what extent.
b. Travel. It is advisable to know how and when a program leader will arrive. Then, if it develops that planes are canceled, a program change can be made. Speakers should be told whom to contact on arrival or in case of emergency.
c. Pre-Program discussion. Provision of opportunity for last-minute discussion before programs is advisable. Some inservice directors ask program participants to arrive a half-hour in advance of their programs, others hold joint meetings for a number of programs leaders at once.
d. Introductions. Program participants must provide biographical data so that they can be accurately introduced. No more than one minute should be allowed per introduction. The only data that need be given are the qualifications and competence of the speaker, his affiliations, and perhaps, briefly, the purposes of his presentation. Many conference experts provide written biographies of all speakers, including their addresses and phone numbers, and confine oral introductions to names and affiliations only.
e. Questions and answers. Sometimes it is desirable to encourage the audience to interrupt speakers with questions throughout their presentation. This bridges the gulf between speaker and listener, helps listeners become actively involved in the presentation, helps eliminate inattentiveness. Speakers must be warned in advance if this method is to be used. More usually, a period of time is allowed for questions after a presentation. It should be understood by speakers and audience how long the period will be. Speakers and consultants should be instructed not to answer questions outside their sphere of competence: otherwise remarks of a psychologist about pharmacology may, for example, contradict statements made by a pharmacologist at the same meeting.
f. Taping-Videotaping. If a program is to be recorded on audio or video tape, clearance should be obtained from the speaker

in advance. Some schools and districts have standard release forms. If transcripts or excerpts of a presentation are to be printed for subsequent distribution, permission should be secured for this too and, preferably, a copy sent to the speaker for review. Where many quotations have been used, a bibliography may be advisable. When taping is planned, recording equipment should be checked well in advance.

g. Material for distribution. If samples, printed matter, photos, or other material are to be distributed as part of a presentation, the material should be viewed by the director in advance. Nothing should be distributed without his knowledge. There should be sufficient quantity for all members of the audience.

h. Audio, visual and audiovisual materials. Audiovisual material accompanying a program should be previewed in advance by the director or his delegate, who should play the tapes at the same sound level to be used for the group presentation. Sound distortions may show up at auditorium volumes that are not apparent at low volumes. Only by stressing to speakers the necessity of clearing visual and audiovisual plans in advance can a director be assured that proper equipment, from blackboards or chart stands to projectors and screens, will function smoothly.

i. Post-program. Speakers, panelists and consultants should not be left dangling at the conclusion of a program. An assistant should be delegated to help them with departure arrangements.

8. *Group process activities*

Group process and experiential techniques can be included in inservice training to improve participants' communication and awareness skills, increase their understanding and effectiveness in dealing with youth, promote self-understanding, and facilitate non-verbal communication with their students.

Inclusion of such activities in inservice workshops will assist teachers who wish to use the techniques as part of their own classroom instruction, after sufficient practice to learn to do so effectively.

Examples of experiential activities that may be scheduled during inservice training include:

a. Communication exercises: example—speaking precisely as audience listens carefully, followed by a playback of the speech on tape.

b. Simulated experiences of acceptance and rejection (see "Breaking In" and "Breaking Out" below).

c. Exercises to increase skill in observation.

d. Exercises utilizing group resources: See "Joy" by William C. Schutz and "Schools Without Failure" by William Glasser, available from most school libraries.

Inclusion of young people in group experiences is suggested for the insight into youthful reactions that can be gained thereby as well as for the feedback on p[illegible]al use of the techniques with students.

Descriptions of some group processes that might be demonstrated during inservice training are given below. In all cases, it is advisable to have a director trained in use of the techniques conduct the sessions.

a. Sensory stimulation. High-degree sensory stimulation is a characteristic of youth culture. Multi-media presentations of hi-fi records, tapes and TV at high volumes, films, slides, and psychedelic lights—perhaps simultaneously—may enable inservice trainees to understand the appeal of sensory inundation to youth.

b. Peer group pressure. Much drug use is believed to result from peer pressure. A demonstration of peer pressure may be staged by having participants sit in a circle. The leader of the exercise asks that one of the participants—he should not specify or direct his request to any individual—volunteer to walk inside the circle formed by the seated participants. As this volunteer strolls around the inner circle, the leader asks if anyone cares to join him. He encourages the stroller to describe his feelings at being alone inside the circle. The "loner" will usually mention loneliness, discomfort, embarrassment. The leader continues to ask if anyone will join the stroller, help him out. As participants eventually join the inner circle, the leader enlarges the number of strollers at the ex-

pense of the sitters, and elicits remarks from both strollers and sitters regarding their feelings, opinions about themselves and the other group, and related comments. It will be seen that, as additional sitters join the inner circle, they become stronger in expressing opposition to the outer group and more indifferent to its comments. It has been shown by experiments that the expressions and comments of both the inner and outer groups frequently correspond closely to the discourse of drug users (inner group) and non-users (outer). The exercise continues until the leader stops it to review and analyze the participants' remarks. If it continues long enough, it will usually reach a point where the inner group reaches a size that acts as a magnet to draw heretofore uncommitted members of the outer circle into the new inner group. This is akin to peer group influence in schools where a sizable drug-using group will suddenly mushroom into one of substantially larger size.

While this exercise is highly recommended, it should be cautioned that, if the leader is not skilled and the group receptive, it may not be successful.

c. "Breaking out." A number of investigators have suggested that the inability of youth to discontinue drug usage after initial experimentation is due to inability to break through a condition of confinement. This may be demonstrated by having a leader—preferably one with experience in this technique—ask a participant to stand in the center of the room surrounded by a number of the participants with arms interlocked. The person on the inside attempts to break out of the confining circle. The difficulty of doing so is clearly illustrated. If the person is successful, the relief and profound psychological reaction can be shown by having him describe his feelings.

This exercise, after demonstration with one person in the center, can be repeated with two or three, to show that multiple participants reinforce each other and are not as apt to give up the struggle as one person operating alone.

d. "Breaking in." A similar exercise can be conducted by having a participant attempt to break into a circle of people with arms interlocked. The purpose is to illustrate the frustration and unhappiness experienced by individuals refused access to a circle and the difference in their mental states when the barriers have been broken and access granted. Again, it is best if the leader has had group process training.

e. Breaking down formalized structures. The stultifying effect of ritualized procedures followed over and over again can be demonstrated by seating arrangements at a workshop or conference. At the beginning, the participants are seated in the standard classroom pattern, in chairs facing a teacher who lectures from his desk, with blackboard behind. The same people are at his right, left, front and back every day—the arrangement that students face, year after year throughout their school careers. After several days, the conference director rearranges the chairs and desks, has the speaker sometimes addressing from a lectern, at other times sitting or standing in the midst of the group. Periodically, audiovisual equipment is moved from one spot to another and projected to a screen similarly moved. Participants' chairs are moved or seats exchanged so that neighbors are varied. In some cases the site too is changed, the group moving from one room to another or outside. With transportation available, the change can be to a different community. Properly done, such demonstrations impress upon teachers the stimulation and vitalization that can attend change in or discard of ritualized procedures.

f. Illustration of frustration. The frustration that can result from stereotyped teaching procedures may be demonstrated with the help of construction toys such as erector sets or creative blocks. Participants are seated at tables with such sets and permitted to create interesting and intriguing constructions without direction or interference. While participants' interest in their creations is still at peak level, the leader suddenly orders the work disas-

sembled. He then leads the participants, with ever-increasing arbitrary directions, through the construction of useless, unaesthetic and unimpressive forms. As time passes, the orders for manipulations become increasingly restrictive and stupid. "Hold A with your left hand, thumb and index finger, and pick up B with the thumb and third finger, right hand," etc. At some point the protests will begin. At this time, the exercise is stopped and analysis takes place of how the frustration was built, for what reason, how it could have been relieved, why participants followed instructions they would have preferred to disregard. Among other things, this exercise will impress upon participants the advantages of lively, engaging, exciting teaching techniques.

9. *Field trips*

Inservice training of more than two or three days' duration will usually include visits to local institutions for observation or participation. Useful field trips include:

a. Halfway houses, if they will permit opportunities to talk with patients and staff; ex-addicts on staffs may be especially helpful.
b. Juvenile detention centers, to observe circumstances of arrest and incarceration and to hold discussions with staff and defendants. Possibly, incarceration in a detention center or jail, for the experience of being locked in, or working for one day as an aide in a withdrawal hospital or treatment center for first-hand observation of drug effects.
c. Courthouses, for discussions with judges, lawyers, prosecutors, probation officers, possi'.ly defendants.
d. Mental hospitals and drug treatment units, for discussions and observations.
e. Young peoples' meeting places—folk churches, stores, be-ins, parks, youth centers.
f. Turnstile houses for runaways and drop-in houses for young drug addicts.
g. Rock music halls—psychedelic sound and light shows—radio stations with audience participation rock programs. The workshop director should guide participants to observe how adolescents react to sensory bombardment. Enjoyment of the stimulation and inundation of sound, sight, words or lyrics, and of kinetic activity (dancing) can be contrasted with unstimulating activities of the classroom. Workshop participants might be urged to contrast their own feelings at the end of an evening at a rock dance with their feelings after a usual evening at home or in front of TV.
h. Youth-audience movie houses.
i. High school chemistry department or college of pharmacology, for practical observation and information about drugs.
j. Research laboratories to observe drug experiments.
k. Offices of hospital social workers—observation and interviews.
l. Where practical, visits to local schools for investigation of (1) bad school situations, and (2) good school programs.

Advantage should be taken of opportunities to observe the drug scene from several points of view. For example, a visit to a hospital may provide interviews with staff as they see the drug problem, as well as with patients. To determine the best ways to conduct productive interviews and to insure against failures, it is advisable for workshop directors or their assistants to check out field trips and interviews in advance.

10. *Drug education films*

Films about drugs may be shown at inservice workshops for (1) educational value to the viewers; (2) to substitute for speakers or to emphasize facts or precepts; (3) to help the audience learn to evaluate films and use them effectively.

Film quality varies widely. Many films still in circulation have lost their potency through age. Hats, skirt lengths, automobiles, outmoded slang, nullify a message no matter how timeless. A film which is up-to-date visually may be marred by dated script and outdated attitudes. Any educator who shows a film he has not previewed himself does so at great risk, regardless of who recommended it. Directors can illustrate this at workshops by showing ineffective drug films as examples of what not to do. They can illustrate the advisability of previewing films

before representatives of the ultimate audience by tape recording student reactions to a film and playing this back to workshop participants who have just seen the film and formed their own opinions. More often than not there will be great diversity.

Where no suitable film for a specific purpose is to be found, an alternative that can be demonstrated at a workshop is to show not entire films but segments. Another possibility is to stop a film at spots where meaningful discussion can take place, or where a film's weaknesses can be discussed.

11. *Reading materials*

If funds permit, providing a kit or binder of carefully selected reading material for participants to keep for reference and reminders is beneficial.

In some situations a kit of materials may be designed for special purpose or effect. For example, a kit loading participants with more material than can possibly be digested in the time allotted, or with poorly selected or irrelevant material, can be used to bring home to the participating teachers the reactions of students exposed to the same kind of inundation. The effect is compounded if homework assignments are stressed.

Except where special situations such as the above prevail, a file or book of selected material should provide information required as background for the subjects to be covered and should be both concise and as complete as possible without duplicating the oral, taped or visual programs. The book can also offer important material which either cannot be covered in the workshop or, because of its technical, statistical or special nature, is best put in writing. Samples of useful literature for distribution to students may be included, with information as to source and cost.

Sometimes reading material is sent in advance as preparation for a conference. While this can be helpful, it is usually difficult enough to get such a kit ready by opening day, let alone ahead of it.

If a kit of materials is not given workshop participants, it is helpful to provide them with a program of the events scheduled, a listing of participants' names, and a bibliography of reference materials such as the one given at the end of this guide to provide directors of orientation or inservice training with background information and ideas.

12. *Housekeeping*

A stimulating, instructive, satisfying conference or workshop is most likely to be achieved when the director has adequate financing, sufficient authority, and deputies to look after housekeeping details so that he can concentrate on the programming. Except for the smallest meetings, a secretary or assistant for physical arrangements is indispensable.

Selecting a meeting site is not difficult for interrupted programming, since usually all that is required is a comfortable and accessible place suited to the participants and program. A continuous program of a weekend or longer presents more problems. Ideally, it should be held at a facility that is not part of the participants' daily routine. A motel on the outskirts of town, accommodations at a mental hospital or youth treatment center, are the type of settings removed from daily living that are most conducive to concentrated and intensive learning. When the site is selected, a director or his assistant might use the following checklist of services and arrangements likely to be required:

a. Housing: Number of nights—singles and doubles—check-in and check-out times—prices—special requirements, if any.

b. Means: Hours—numbers for breakfasts. lunches, dinners—special dietary requirements—between-meal snacks—finanical arrangements.

c. Transportation: To meeting if required —from meeting if required—for field trips—parking—special transportation for speakers, consultants, program leaders, staff.

d. Meeting rooms: Number required—sizes required—hours—permits (keys, arrangements with guards, passes)—utilities (lights, heat, air-conditioning)—furnishings (podium, desks, tables, chairs).

e. Equipment other than audiovisual: Blackboards, easels, bulletin boards—photocopying machine—telephones and telephone numbers—special lighting—notepads, pencils—drinking water—name tags.

f. Audiovisual equipment: Public address system, microphones–recorders and tapes –projectors and screens–TV, radio or phono–cameras–permits or clearances for use of material–backup audiovisual equipment.
g. Printed material: Registration forms–programs–instruction sheets–reference books or kits.
h. Program items: Films–reference books, dictionaries, phonograph records–material for demonstration or distribution.
i. Miscellaneous services: Greeting participants–wake-up services–emergency arrangements–secretarial help–payments and check cashing.
j. Publicity, photographs, press conferences. –if determined advisable.
k. Emergency arrangements: Delays–absences of speakers and program principals.
l. Evaluation: Questionnaires–check sheets.
m. Clean-up: Equipment removal–housecleaning–payments–thank-you letters.
n. Followup: Arrangements for future meetings.

Miscellaneous suggestions made by directors of successful workshops and conferences include the following:

a. Strive for informality. Study and learning flourish in a friendly, cordial atmosphere, tend to be stunted by rigidity. Conference directors are urged to encourage informal communication and friendly arrangements of seats, lecterns, tables and audiovisual and other equipment, and to rearrange the seating from time to time.
b. Record programs amenable to taping or videotaping, such as speeches, panel discussions, proceedings of discussion groups, group activities. Some of these presentations, played back either immediately after a program or after intervening programs, may spark useful discussion. Some tapes may be useful for lending to participants either for review or for use at subsequent programs. They are also useful in cases of temporary absences from sessions due to emergencies. Recording and playback will be facilitated if a professional audiovisual consultant is on hand.
c. Provide time for impromptu discussion. Information and insights can be gained from informal discussions following programs or during meal times or free periods, particularly if speakers and other workshop leaders attend. (One should avoid allowing so much time that participants' feelings are dissipated.)
d. Secretarial assistance. Details to which secretarial help can attend include: finances, emergencies, arrangements for reproduction of transcripts, speeches and other material, checking on equipment, transportation arrangements.
e. Credit for inservice training. If possible, increment credit should be given for inservice training, and released time arranged. At the very least, a certificate of attendance should be offered. Post-conference letters to supervisors of inservice training participants will often help the participants put to use what they have learned.

13. *Workshop programming in terms of workshop length*

While workshop programming must depend on time and budget available, directors should opt for the maximum in the knowledge that value obtained for the investment goes up appreciably with each day and each $100 added to the base.

A one-day program is a minimum effort. It is better than no inservice training for teachers, but not as effective as longer programs because the subjects introduced must be limited and the time will be insufficient to change attitudes and skills significantly. Just as music can be heard on a small, AM radio, its sound is more enjoyable if FM is added and still further improved with stereo or a custom-designed high fidelity system.

Program contents are compared below in terms of program length, to indicate how much more can be presented and gained as the time span is increased.

Workshop Programs Of Varying Lengths

Suggested One-Day Program (Least effective–most expensive, in terms of returns)
Definitions of drug use, misuse and abuse
Psychosocial issues

Pharmacology
Interviews with students
Role of education

Suggested Weekend Program

Increase the depth in coverage of topics listed above and add:
Legal aspects
Discussions with former users
Review of audiovisual materials—perhaps two drug films and filmstrips, with subsequent discussion periods

Suggested Three-Day Program

Increase the depth in coverage of topics listed above and add:
Statistics
Goals of drug abuse education
Exercises in group processes
Religion and drugs
Discussions with students, on a one-to-one or other basis

Suggested Five-Day Program

Increase the depth in coverage of topics listed above and add:
Current research in drugs
Cultural influences and determinants in drug use
Field trips to treatment and rehabilitation centers
Exercises in communication—listening to pop music and, especially, the lyrics; reactions of students, then teachers, to a drug film
Analysis of existing drug education programs
Panel discussion presenting divergent points of view on basic issues and values involved in drug abuse. Panel could include young people, drug user, enforcement officer, and others, depending on views to be heard
Writing of guidelines for drug education for teachers—for students

Suggested Two-Week Program

A workshop of this length permits the most innovative and desirable program. The scope and depth of coverage of all topics listed above can be increased, and the following added:
History of drugs and drug problems
Relation of drug abuse to other problems
Additional field trips to community facilities
Assignments—a day as an aide in a treatment facility or youth center
Review of related materials—audiovisual, printed, press
Development of instructional materials—guidelines, pamphlets, audiovisuals. Review of them by teachers or students invited to workshop for this purpose

THE NATIONAL CLEARINGHOUSE FOR DRUG ABUSE INFORMATION: A National Information Service

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The establishment of the National Clearinghouse for Drug Abuse Information (NCDAI) was announced in March, 1970, by the President in response to the critical national need for a focal point for accurate and reliable information on drug abuse. The Clearinghouse operates as a central source for the collection and dissemination of drug abuse information within the Federal government and serves as a coordinating information agency for groups throughout the country involved in drug abuse programs. As a result, the Clearinghouse provides services to diverse groups with varying information needs. Users include physicians, lawyers, pharmacists, teachers, police, local government officials, Federal government officials, community leaders, concerned parents, young people, researchers, and representatives from the print and electronic news media.

A major activity of the National Clearinghouse for Drug Abuse Information is collecting data on drug abuse programs operating in both the private and public sectors. This includes collecting information on education programs and treatment facilities, the nature and effect of drugs, publications, curricula, community action programs, and the activities of local, State, and Federal agencies.

The NCDAI classifies, processes, and stores this information in both printed and computerized form. Drawing upon this mass of information, the Clearinghouse operates a nationwide network of drug abuse information centers, develops drug abuse resource materials, and provides responses to individual, specific inquiries.

In addition to collecting and storing, the Clearinghouse is also responsible for disseminating this information. The NCDAI prepares numerous information materials, including fact sheets, directories, bibliographies, and other publications, which are distributed to the general and professional public as well as to government agencies, both Federal and non-Federal. The Clearinghouse is geared to answer inquiries and provide services to the general public as well as to special groups such as educators or research scientists. Inquiries which cannot be answered directly by the Clearinghouse are referred to the appropriate government or private resources.

The Clearinghouse also employs its expertise to plan and develop information collection and processing systems concerning drug abuse information programs, resources, and materials. To date, the Clearinghouse has developed and operates information collection systems concerning national and international drug abuse programs, the world literature, and Federal grants and contracts concerned with drug abuse. In addition, it has developed information systems for the use of Federal officials, including those in the White House Special Action Office for Drug Abuse Prevention.

Distribution of General Audience Drug Abuse Information Materials

The NCDAI serves as the central distribution point for Federal publications related to drug abuse. Since its inception, the Clearinghouse has distributed more than 20 million copies of drug abuse publications. The most widely disseminated publication is *A FEDERAL SOURCE BOOK: ANSWERS TO THE MOST FREQUENTLY ASKED QUESTIONS ABOUT DRUG ABUSE,*

produced jointly by the U.S. Departments of Justice; Health, Education, and Welfare; Defense; Labor; and the Office of Economic Opportunity. Publications of the Bureau of Narcotics and Dangerous Drugs, Social and Rehabilitation Service, Law Enforcement Assistance Administration and several other agencies are also currently being distributed.

In addition to publications, the Clearinghouse also disseminates information on relevant films, records, plays, posters, and any other type of material available.

The Clearinghouse has assembled packets of information materials suitable for answering a range of general inquiries related to drug abuse as well as groupings of publications and films oriented toward a particular topic. In addition, in order to ensure that the most pertinent and useful materials are being disseminated, the NCDAI also provides consultation to groups preparing for a seminar, lecture series, panel discussion, or conference on drug abuse.

The NCDAI also disseminates information about drug abuse films. Current information on the rental, distribution, and purchase of privately-produced films and films originating from other Federal agencies can be obtained from the Clearinghouse at all times in the form of a listing entitled "Checklist of Recent Films on Drug Abuse." *Selected Drug Abuse Education Films* is a concise guide to the use of several films on drug abuse. The guide, which is periodically updated, gives narrative summaries of content as well as pertinent details on how to obtain films for preview, rental, loan or purchase. The film guide also suggests ways to use films in the classroom, appropriate audiences, supplementary materials, and ideas for further discussion.

Drug Abuse Prevention Materials for Schools is not limited to films, but includes various information materials for school children of all ages, from elementary to senior high. It also includes a section on minority materials. One of the largest components of the publication is a narrative description of the materials included in "The Social Seminar." "The Social Seminar" is the general theme given to a special integrated program of films and printed materials primarily for teacher training developed by the National Institute of Mental Health in cooperation with the Office of Education. The core of the training program consists of an 18-part multi-media packet including 15 films, an overall descriptive film, general guidelines, and a discussion guide for each film. Also included is a programmed text covering the factual and pharmacological material relating to drugs. The package draws its name from its underlying perspective: there are no simple solutions to complex problems. "The Social Seminar" approaches the problems of drug abuse and drug abuse prevention within the context of total society. *Drug Abuse Prevention Materials for Schools* includes order blanks for all of the items included.

Hundreds of films dealing with the issue of drug abuse have inundated the media and are being provided by their producers to schools and community groups. In order to keep the potential users of such films abreast of current availability, the NCDAI has compiled a comprehensive audiovisual catalog. The catalog includes descriptive data on the more than 200 films, filmstrips, overhead transparencies, recordings and cassettes produced within the past three years. The catalog is divided into two parts. The first focuses on audiovisuals available from the Federal government; the other part describes films available from non-Federal sources. Availability information is provided with each entry. Such a catalog is of use to schools, colleges, voluntary action groups, and others. Devised in loose leaf form, the catalog will be routinely updated.

To date, each of the Clearinghouse film guides contains only narrative descriptions—no attempt has been made to evaluate. However, the NCDAI is obtaining evaluations of current audiovisual, broadcast, and print media materials. Films, recordings, and other audiovisual materials produced within the past three years are being reviewed. The same general format is followed in evaluating recent public information materials such as pamphlets, flyers, and other publications. In each case, the material is evaluated for subjective effectiveness and scientific accuracy. When the project is completed, narrative descriptions will be stored in Clearinghouse computer banks; the evaluations will not be computerized, but they will be made available to potential users of audiovisual or printed materials.

Similar evaluations are being conducted on broadcast media materials. Included are scripts, films, records, and any other appropriate materials. Approximately 100 examples are reviewed each year. These findings are published in "Tune In," a newsletter on drug abuse programming published by the NCDAI to meet the information needs of radio and TV broadcasters. "Tune In" describes

broadcasters' activities in the area of drug abuse so that ideas on programs presented on the air by one station can become known to other professionals in the field. "Tune In" currently features excerpts from evaluations of radio and television materials to facilitate an interchange of program material and ideas among broadcasters.

As another aid to broadcasters, filmmakers and other interested individuals or groups, the Clearinghouse maintains a film bank of stock scenes on drug abuse. Footage is continually being added to the film and audio bank so that authentic motion picture footage and still photographs will be available from a comprehensive stockpile.

Response to Public Inquiries

The continuous distribution of drug abuse publications in response to public demand is managed through a complex logistical operation by the Clearinghouse. These requests from the general public are usually for specific publications and do not call for any particular expertise in replying. However, the Clearinghouse has also received more than 100,000 inquiries which require complex and detailed responses in addition to specialized materials. Inquiries of this nature range from chemists asking for procedures on identifying drugs of abuse in body fluids to community leaders setting up a drug abuse prevention program. These inquiries are received by the Clearinghouse through the mail, via personal visits, direct telephone calls, or through a 24-hour telephone message service. A total of over two million inquiries were handled by the NCDAI in its first two years of operation.

Specialized inquiries are processed by NCDAI staff members. NCDAI staff maintains close communication with researchers, programs and consultants in the field, and thus remains in touch with change and progress in the drug abuse field. Clearinghouse information specialists have received substantial formal training in drug abuse problems in addition to their prior academic and work experience.

If a request for information requires a thorough search of the literature pertinent to the subject of inquiry, the specialist will utilize the computerized information storage and retrieval system by drawing from either the resource and materials or drug abuse program file. Requests for exhaustive coverage of a topic are processed by completing a computer search and sending the relevant printouts to the inquirer. When the demand for a computer search on a specific topic recurs over a period of time and the subject grows to have a more general audience, the Clearinghouse will publish the most recent and complete version of the search and thereby have it readily available for immediate distribution. The NCDAI publications, "Selected Reference Series" and "Report Series," are a reflection of these recurring requests for information.

The "Selected Reference Series" is a series of bibliographies which are short, representative listings of citations on subjects of topical interest. Each reference series is meant to present an overview of the existing literature, but it is not meant to be comprehensive nor definitive in scope. For example, reference lists concerning the use of drugs by young people, the effects of the drugs of abuse on the reproductive processes, drug abuse and the military, and methadone have been prepared.

The NCDAI "Report Series" consists of a "Modality Series" and a "Drug Topic Series." The "Modality Series" presents various approaches and solutions to drug abuse and drug abuse related problems. Issues in this series define the concepts inherent in the particular approach being dealt with and provide examples in the form of descriptions of operating programs. Some issues are *Voluntary Action and Drug Abuse: Some Current Highlights; Drug Abuse Treatment and Prevention—Religious Activities and Programs; Methadone Maintenance Programs; Crisis Intervention: Current Developments;* and *Community Action Programs.*

The "Drug Topic Series" consists of fact sheets on various aspects of the drug abuse problem, including narcotic antagonists, STP, PCP, cocaine, MDA, drug detection methods, and others. These fact sheets cover the history; sociocultural, biomedical, and psychological aspects; opinions of authorities in the field; and a general attempt to clarify some of the areas least understood by the public. These fact sheets are designed to answer inquiries requiring more explanation than is provided by available public information materials.

Other NCDAI "Report Series" concern areas of general interest to people involved in drug abuse activities. For example, one recent issue provides complete information on Federal funding; another entitled *Selected Government Materials on Drug Abuse* contains abstracts of Federal publications pertaining to drug abuse. Yet another describes training opportunities for drug abuse personnel.

By observing the frequency of requests for

searches of the literature, the Clearinghouse is able to keep attuned to changing information needs, new areas of interest and concern to the public, as well as shifts in currents and trends in the drug abuse field throughout the country. Development of resource materials is thus tied directly to the demands of the public.

NCDAI Computerized Information-Retrieval System

The NCDAI is the first Federal agency to systematically organize and synthesize the mass of substantive data in the drug abuse field into an operational computerized information storage and retrieval system. The NCDAI system features abstracts or descriptions of books, pamphlets, journal articles, posters, films and other audiovisual materials, as well as descriptions of drug abuse treatment and prevention programs. The system utilizes the IBM developed *Document Processing* module, an automatic indexing software package available for use with the System 360. The 360 enables the increased storage of citations by providing multi-volume access. Searching of the files is initiated by utilization of cathode ray tube and typewriter terminals with printouts of searches accomplished by an off-line high speed printer. This configuration permits direct on-line access to the main NCDAI data base on a time-shared basis by established satellites with compatible terminals.

The NCDAI system is a natural language, whole text processing system which has as its most important feature, the ability to incorporate words appearing in the literature into its vocabulary automatically. The dictionary word entries arise from the most recent literature abstracted or programs described, thereby keeping the entire system updated and free of archaic terms. Searches are formulated by combining the dictionary words into logical statements which retrieve the desired abstracts from the computer.

The NCDAI data base is organized into two main files. First, the Drug Abuse Information Resources and Materials file contains abstracts of documents and audiovisual materials. Scanning of the biomedical, pharmacological, social, and behavioral science literature in addition to more popular and unorthodox publications such as the underground press is conducted on a regular basis. The file contains standard and historically significant works ranging from the *LaGuardia Report on Marijuana of 1944* to the *Indian Hemp Commission Report of 1893–4*, but is essentially composed of the most current studies in the field. The coverage of this file is monitored by comparing its holdings to current materials so that gap areas can be identified and filled.

All computer entries are assigned an indexing code which defines the major subject area within which the document logically falls. Some of these subject areas are: sociocultural aspects of drug abuse; epidemiology; law and public policy; behavioral and physiological effects of drugs, prevention-public education; psychology; pharmacology; etiology; treatment and rehabilitation and volatile substances. Abstracts can be retrieved by searching on these subject area designations, title, author, year of publication, medium, or by a more complex procedure utilizing Boolean logic in combining index terms.

A recent addition to this file is a Media Recall System. This basically is a computerized index system to the microfilm transcripts of radio and television broadcasts and clippings from newspapers and magazines. This new system, at present primarily for use of NCDAI and other Federal agency staff, is a useful aid for answering inquiries.

The NCDAI system uses this computer file to develop its *Annotated Bibliography on Drug Dependence and Abuse.* The publication is constructed in a fashion similar to the computer file itself and categorizes references according to the identical major subject areas. The bibliography is updated annually. The *Annotated Bibliography* should be especially helpful to students, law enforcement officials, teachers, or researchers. A preliminary edition, *Drug Dependence and Abuse: A Selected Bibliography* was published prior to the *Annotated Bibliography* and is still available upon request.

The National Inventory of Drug Abuse Programs file has been expanded and is now part of a larger integrated system, the Program Management Information System (PROMIS). This system is a comprehensive collection of information on drug abuse programs throughout the country. The user demands for searches from this file include Federal officials, program directors, parents in need of consultation, young people looking for treatment facilities, teachers starting prevention programs in their schools, or law enforcement officials wishing to set up a training program for their staff. The types of programs described and entered into the computer include treatment, rehabilitation, information, education, training, community action, counseling and supportive programs. In

order to facilitate gathering of data, rather than utilizing a welter of ad hoc and sporadic calls to agencies for project related data, the PROMIS system uses a single data collection system to capture information for many purposes. Information collected by using the standard PROMIS data collection form is used as the basic data for all data processing systems. In order to meet the varying needs of the Federal agencies, the White House Special Action Office for Drug Abuse Prevention, and the public sector, the information collected will be accessible through several data processing systems. Initially, two processing systems have been set up: The Information Storage and Retrieval system is a text processing system, based on substantive narrative descriptions of projects. This system is used to search and retrieve information on programs through the use of key words and Boolean algebraic logical manipulation. System outputs of this are on-line displays and printouts. demand searches, printed directories, and resource listings.

The second processing system comprising PROMIS is Data Management. This system is designed to perform basic analytical and report generation functions. The data emphasis in this system is on numeric and management data rather than on descriptive information. The Data Management system will allow the generation of analytical reports on Federally Funded programs and private sector activities including agency reports, geographical reports, funding reports, and certain basic descriptive data on projects.

Thus, utilizing the whole PROMIS concept, information on programs can be retrieved upon request in many ways including geographic location, type of program, mode of operation, funding source, and sponsoring organization. Each program entry also contains a detailed narrative description written from materials and reports contributed by the program itself. Included in the narrative description is information on speakers bureaus, staffing, services, and activities of the program. At the end of each computer entry, the materials and publications generated by the program are listed, including curricula, pamphlets. annual reports, evaluation studies and films. The entire list of these references is also abstracted and entered into the Drug Abuse Information Resources and Materials file so that they can be retrieved upon request.

In order to keep the Federal portion of the PROMIS system as up-to-date as possible, certain guidelines have been issued for its operation. Federal agencies have been asked to supply PROMIS data on all projects funded or implemented within 15 days of funding or award and monthly PROMIS listings will be supplied to all Federal agencies for correction. Corrections are submitted within 15 days of receipt of the monthly listing.

The PROMIS file is the data base from which the Clearinghouse publication *An Annotated Directory of Drug Abuse Programs in the United States* is derived. The *Annotated Directory* includes several listings of programs according to State, city and type of program as well as narrative descriptions incorporating all the information included in the computer entry for each program. The Directory will be continually monitored by the NCDAI so as to delete closed-out programs, add new ones, and change outdated information recorded for existing programs. The *Annotated Directory* is revised and reissued periodically as new information becomes available, and is produced in loose leaf form for easy maintenance by the user.

NCDAI Communications Network System

The Clearinghouse has evolved its Drug Abuse Information Communications Network System by cooperating with several States and Federal agencies also involved in developing information storage and retrieval services. The result is a program of stimulating and encouraging existing and newly formed drug abuse information centers to participate in the Clearinghouse *Drug Abuse Communications Network* (DRACON).

The basic premises of the DRACON operation are to provide decentralized access to large scale data bases and prepared materials so that regional needs may be met as closely as possible to the source of the problem, and to maximize the appropriate use of both national and local resources, increase cooperation between drug abuse information resources, and develop improved and truly responsive communications.

Specific mechanisms for the operation of DRACON include:

1. Tie-ins to the NCDAI central computer data bank via on-line computer terminals.

2. A wide range of NCDAI support provided to centers. This support can range from NCDAI publications and consultation on program development to the training of center personnel.

3. Joint data collection and information development projects between centers and NCDAI.

4. Development by the NCDAI of new materials and services to meet DRACON centers needs.

5. Active liaison and interchange of information between NCDAI and DRACON centers including cooperative exchange and input arrangements.

Once a Center has been accepted as a member of the Drug Abuse Communications Network, the NCDAI provides the following services:

1. Training of center personnel in all phases of information center operations on "an as needed basis"—usually quarterly throughout each year. Centers representing some States, Federal agencies and local communities have sent their information specialists to the Clearinghouse for an intensive training course in the techniques of searching and operating the complex of devices employed by the NCDAI. Terminals with on-line access to NCDAI information files are established on site for use by each DRACON center.

2. On-site consultation on special projects or program development.

3. Access, without charge, to the NCDAI computerized data banks.

4. Quantities of NCDAI publications, and limited quantities of government films.

5. Liaison continuing through a designated NCDAI "desk man" for each center and through the NCDAI DRACON coordinator.

Upon entering the DRACON system as an authorized center, the center agrees to provide the following *basic* services:

1. Providing Drug Abuse Information Data Base search services to all persons within a defined geographical or professional category agreed upon between NCDAI and the center. Data base on-line access is to be controlled using agreed upon criteria, and centers may charge a nominal fee to cover only actual costs.

2. Distribution, on request or to answer inquiries, of NCDAI publications without charge. NCDAI materials for mass distribution may be supplied without charge if the project is approved by NCDAI.

3. Each center will refer complex or locally unhandleable inquiries to the NCDAI in a mutually agreed upon manner.

4. Each center will fund terminal equipment rental, telephone line costs, and staff costs for their operation.

5. The DRACON center must maintain sufficient staff to provide the agreed upon service to its population served. Hours open for service, telephone, and personal visit facilities must be adequate to provide effective service.

6. Centers should develop an effective means to communicate new information to the NCDAI and participate in NCDAI data collection activities for their geographical area or population served.

7. Centers will submit monthly status reports on DRACON operations to the NCDAI.

8. Centers will adequately publicize their service within their geographical or population area.

9. When mutually agreed upon, centers will participate in joint center/NCDAI information development projects.

Drug Abuse Information Centers and other drug abuse programs are evaluated for inclusion into DRACON on an ad hoc basis. Generally, applications will be evaluated on the basis of population or area served, services to be offered, willingness to cooperate on joint NCDAI materials preparation and data collection projects, staff resources, willingness to cooperate in a truly national, mutually beneficial operation, and degree of acceptance of the basic DRACON agreement. Special considerations will also be evaluated, such as service to an area or population of high drug abuse incidence or special interest areas such as major research or training centers.

Those desiring membership should write to the Program Director, National Clearinghouse for Drug Abuse Information, Room 8C–09, 5600 Fishers Lane, Rockville, Maryland 20852.

APPENDIX A

ADDITIONAL RESOURCE MATERIALS

The following publications are available on a single, complimentary copy basis from the National Clearinghouse for Drug Abuse Information, 5600 Fishers Lane, Rockville, Maryland 20852. All but the Report Series and the Reference Series can be purchased in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Drug Dependence and Abuse: A Selected Bibliography (1971)

This publication is a selected listing of the scientific as well as the popular drug literature. The bibliography is intended for students, teachers, lawyers, clergy, and the interested and concerned public. It cites current and classical books, and articles or studies on drugs and drug-related topics. Some of the subject areas covered are: epidemiology, law and public policy, psychology, prevention, pharmacology, effects of drugs and drug usage, and the various classes of drugs.

Drug Flyers: *LSD, Marihuana, Narcotics, Sedatives, Stimulants, Volatile Substances, Cigarette Smoking, Alcohol, and Drug Abuse (in general)* (1971)

These nine flyers are designed for the layman interested in non-technical, factual information about the major drugs of abuse. Each flyer presents this information in a question/answer format. Some of the questions answered are: What is the drug? What are its effects? What are its medical uses? How does it work? Is it dangerous? How widely is it used? Is it addicting? What are the legal controls? What research is being done?

***Drug-Taking in Youth*—Louise G. Richards, Ph.D., and John H. Langer, Ed.D.** (1970)

Divided into two sections, this book discusses the social and psychological aspects of youthful drug-taking, and the educational problems inherent in youth's experimentation with drugs. Section I covers such topics as: the extent and patterns of drug use, the social context of youthful drug use, trends in arrests, and the motivation and personality types who may be vulnerable to drug dependence. Section II discusses early education efforts, drug education today, and educational programs and curricula. A bibliography for each section is provided.

Drug Abuse Prevention Materials for Schools

A catalog of drug abuse education resources for schools, including both film and print media materials. The catalog lists materials designed for several different target audiences, including elementary school students, junior and senior high school students, minority materials for inner-city schools, and a training package for teachers. The catalog comes complete with ordering information and order forms.

A Federal Source Book: Answers to the Most Frequently Asked Questions About Drug Abuse (1971)

A 30-page booklet designed to give the layman, in non-technical language, the answers to the most frequently asked question about drugs and other substances of abuse. A glossary of drug terminology is also provided.

A Guide to Drug Abuse Education and Information Materials (1971)

This 20-page pamphlet, prepared by the National Institute of Mental Health, lists available material for drug abuse prevention and education campaigns. Included are: spot announcements for TV and radio, print ads for newspapers and magazines, films, booklets, and posters. These materials can be used by schools, churches, civic and other organizations interested in presenting their own drug abuse education programs. Order blanks are provided.

***Katy's Coloring Book About Drugs and Health* (1971)**

This 20-page coloring book includes a Parents' and Teachers' Guide which suggests ways of using the publication to help children learn to distinguish proper uses of drugs from improper or dangerous uses. The publication is directed primarily at the dangers of taking medicines found around the house for other than intended purposes.

***LSD–25: A Factual Account*—Louise G. Richards, Ph.D., Milton H. Joffe, Ph.D., Jean Paul Smith, Ph.D., George R. Spratto, Ph.D. (1969)**

This booklet was designed to be the layman's guide to the pharmacology, physiology, psychology, and sociology of LSD. Using a question and answer format, this publication provides information on research, physical and psychological effects, reactions and risks, with an emphasis on the individual and his environment, and the social problem of LSD abuse. The appendices include: frequently asked questions about LSD, definition of terms, and the chemical analysis of the drug. Lists of references, films, and laws are also presented.

***Marihuana and Health:* Second Annual Report to Congress from the Secretary of Health, Education, and Welfare (1972)**

This publication, written for the lay and professional public, summarizes up-to-date scientific knowledge about marihuana. It addressed itself to the question: "What are the health implications of marihuana use for the American people?" The following topics are discussed: the extent and patterns of use in the United States; marihuana use in other countries; analysis of marihuana constituents; preclinical research in animals; physical and psychological effects in man; possible therapeutic uses of cannabis; and future research directions.

National Clearinghouse for Drug Abuse Information Selected Reference Series

Each bibliography of the NCDAI Selected Reference Series is a short, representative listing of citations on subjects of topical interest. The selection of literature is based on its currency, its significance in the field, and its availability in local bookstores or research libraries. Each reference series is meant to present an overview of the existing literature, but not meant to be comprehensive or definitive in scope.

Selected Bibliography on the Use of Drugs by Young People

Selected References on Drugs and the Military

Methadone and the Treatment of Addiction

National Clearinghouse for Drug Abuse Information Report Series

This series of fact sheets on various aspects of the drug problem was developed to answer many of the questions of the public on drug abuse. Some are composed of reviews of the published research on the lesser known drugs of abuse and others deal with approaches and solutions to drug abuse and drug abuse-related problems. The following is a listing of published or soon-to-be published editions in the series:

Federal Government Publications on Drug Abuse

Voluntary Action and Drug Abuse: Some Current Highlights

Drug Abuse Treatment and Prevention—Religious Activities and Programs

Drug Abuse Programs: A Guide to Federal Support

Selected Government Printed Materials on Drug Abuse

Drug Abuse Programs: A Selected Directory for Minority Groups

National Clearinghouse for Drug Abuse Information Briefing Report

Methadone

Cocaine

Mescaline

PCP

Drug Abuse Prevention: A Guide to Speakers

***Passages on Drugs From the Literature* (1970)**

Written to give readers a personal account of the effects of hard narcotics on the individual, these 15 passages by nine writers describe the effect that heroin, cocaine, and/or opium had on their lives and the lives of people they knew. Powerful, emotional descriptions of the street scene where hard narcotics are widely used are presented. Included are passages by such well-known authors as Piri Thomas, Cab Calloway, Malcolm X, and Claude Brown.

***Selected Drug Abuse Education Films* (1971)**

A descriptive listing of 17 films on drug use and abuse, produced by Government agencies and commercial film makers. Information regarding purchase and rental prices and a Loan Request Form are also included.

***The Social Seminar* (1971)**

See page 75.

APPENDIX B

STATE LENDING LIBRARIES

All National Institute of Mental Health films, training materials, and publications on drug abuse are available from the following agencies within each State. NIMH encourages use of these agencies as a resource for drug abuse information and education materials. They have agreed to provide or lend these materials on a free basis, giving priority to educational institutions.

Films are also available on a rent and a purchase basis from the NIMH Drug Abuse Film Collection, National Audiovisual Center, GSA, Washington, D.C. 20409.

If your State is not listed, please encourage your State Department of Education, State Department of Public Instruction, State Department of Health, or State Department of Mental Health to write to: Public Affairs, Office of Communications, 5600 Fishers Lane, Rockville, Maryland 20852.

Alabama
Norman Rice
State Dept. of Education
State Office Bldg.
Montgomery, Ala. 36104

Alaska
Mary Beth Hilburn
Dept. of Education
Pouch F
Juneau, Alaska 99801

Arizona
Film Library
Arizona State Dept. of Health
14 N. Central Rm. 301
Phoenix, Ariz. 85004

Robert Bell
Drug Ed. Div.—Dept. of Educ.
100 F. Alameda
Suite 511
Tucson, Ariz. 85701

Arkansas
Drug Training Program
Arch Ford Bldg.
Little Rock, Ark. 72201

California
Film Library
Bureau of Mental Health Education
Department of Mental Hygiene
744 "P" St.
Sacramento, Calif. 95814

Colorado
Mr. Robert W. Gonring
Dept. of Health
4210 East 11th Ave.
Denver, Colo. 80220

Mr. James D. Meeks
Colorado Dept. of Education
State Library Bldg.
1362 Lincoln
Denver, Colo. 80203

Connecticut
Dept. of Mental Health
A.D.D.D.
51 Coventry Street
Hartford, Conn. 06112

Robert C. Tucker
Yale Drug Dependence Institute
98 Park Street
New Haven, Conn. 06519

Dr. Russell D. Capen
State Dept. of Education
P.O. Box 2219
Hartford, Conn. 06115

Donald Kribbs
Capital Regional Drug Infor. Ctr.
179 Allyn St.
Hartford, Conn. 06103

Delaware
State Film Library
Dept. of Public Instruction
John G. Townsend Building
Dover, Del. 19901

Florida
Bureau of Group Treatment
Staff Development Center
c/o W. H. Johnson Bldg.
401 N. Monroe St., 3rd Floor
Tallahassee, Fla. 32301

Georgia
Jack S. Short
State Dept. of Educ.—Film Lib.
156 Trinity Ave., S.W.
Atlanta, Ga. 30303

Hawaii
Dept. of Education
Audio-Visual Center
4211 Waialae Ave., Rm. 7103
Honolulu, Hawaii 96816

Illinois
William E. Skadden
Ill. Dept. of Mental Health
401 South Spring Street
Springfield, Ill. 62708

Iowa
Mr. Paul Spurlock
Grimes State Office Bldg.
State Dept. of Public Instruction
Des Moines, Iowa 50319

Kansas
Carl J. Haney
State Dept. of Education
120 E. 10th
Topeka, Kan. 66612

Kentucky
Mrs. Anne Hamilton
Ky. Dept. of Education Library
Frankfort, Ky. 40601

Wilbur Smith
Dept. of Education
Clinton & High Sts.
Frankfort, Ky. 40601

Louisiana
Mr. E. E. Davis, Jr.
A-V Education
P.O. Box 44064
Capital Station
Baton Rouge, La. 70804

Maine
Film Library
Dept. of Health & Welfare
Augusta, Maine 04330

Maryland
Bill Fallette
Film Services
Md. St. Dept. of Health and Mental Hygiene
301 West Preston St.
Baltimore, Md. 21201

Massachusetts
Dept. of Education
Office of Audio-Visual Services
182 Tremont St.
13th Floor
Boston, Mass. 02110

Michigan
Dr. E. J. McClendon
Chief, Health, Phys. Ed., & Recreation
State Dept. of Education
Lansing, Mich. 48902

Minnesota
Dr. Carl Knutsen
Minn. Dept. of Education
Capital Square Bldg.
St.Paul, Minn. 55101

Mr. William G. Swanson
Range Mental Health Center, Inc.
624 South 13th Street
Virginia, Minn. 55792

Charles M. Heinecke
Minneapolis Health Dept.
250 South Fourth St.
Minneapolis, Minn. 55414

Mississippi
Educational Media Services
420 North State Street
Jackson, Miss. 39201

Missouri
Mr. Murray Hardesty
State Dept. of Education
Jefferson City, Mo. 65101

Montana
Office of the Superintendent of Public Instruction
Audiovisual Library
Helena, Mont. 59601

Nebraska
Mr.T. R. Dappen
Health Education
State House, Box 94757
Lincoln, Neb. 68509

Nevada
Nevada State Dept. of Education
P.O. Box 390
Las Vegas, Nev. 89101

New Hampshire
Mr. Jesse Trow
Dept. of Health & Welfare
Div. of Public Health
61 South Spring St.
Concord, N.H. 03301

New Jersey
Division of Narcotic & Drug Abuse Control
109 West State Street
Trenton, N.J. 08608

William Burcat
New Jersey Dept. of Education
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